

حمل الآن

مجاناً وحصرياً

المراجعة رقم (1)

اختبار شهر مارس



Important questions on unit one from educational directorate exams



First Multiple choice questions

- 1 Which of the following equals $3 \times 3 \times 3 \times 3$? (Ayat - Giza 25 / Samalut - Minya 25)
(a) 3×4 (b) 3^4 (c) 4^3 (d) $3 + 4$
-
- 2 The third power of the number 4 is (Kafra Saad - Damietta 25)
(a) 3^4 (b) 4^3 (c) 12 (d) 3
-
- 3 $(-5)^0 = \dots\dots\dots$ (Ain Shams - Cairo 25)
(a) 5 (b) -5 (c) 1 (d) 0
-
- 4 $-2^0 = \dots\dots\dots$ (North Giza - Giza 25)
(a) 0 (b) 1 (c) -1 (d) 2
-
- 5 $4a^0 - (4a)^0 = \dots\dots\dots$ (Naqada - Qena 25 / El Badari - Assiut 25)
(a) 0 (b) 4 (c) 3 (d) 10
-
- 6 Which of the following equals $(-3)^4$? (East Shubra Al Khaimah - Qalyubia 25)
(a) -12 (b) -7 (c) 81 (d) -81
-
- 7 $(-3)^3 = \dots\dots\dots$ (Mokattam - Cairo 25)
(a) 9 (b) 27 (c) -9 (d) -27
-
- 8 Which of the following equals -2^6 ? (Ibshaway - Faiyum 25 / Sadat - Menoufia 25)
(a) -12 (b) 12 (c) 64 (d) -64
-
- 9 Which of the following equals 3^{-2} ? (Central - Alexandria 25)
(a) $\frac{1}{9}$ (b) -9 (c) $-\frac{1}{9}$ (d) -6
-
- 10 $(-1)^{104} + (-1)^{103} = \dots\dots\dots$ (Al Haram - Giza 25)
(a) 0 (b) -1 (c) 1 (d) 2
-
- 11 The multiplicative inverse of the number 3^{-2} is (Faqous - Sharkia 25)
(a) -3^2 (b) 3^2 (c) 2^3 (d) -2^3

- 12** The multiplicative inverse of the number $\left(-\frac{2}{5}\right)^2$ in simplest form is *(Al Qusiya - Assiut 25)*
 (a) $\frac{4}{25}$ (b) $\frac{25}{4}$ (c) $\frac{-4}{25}$ (d) $\frac{-25}{4}$
-
- 13** The additive inverse of the number 4^3 is *(Abu Tig - Assiut 25)*
 (a) 4^3 (b) -4^3 (c) 4^{-3} (d) -3^4
-
- 14** The additive inverse of the number 5^{-2} is *(Kafr El Zayat - Gharbia 25)*
 (a) 5^2 (b) $(-5)^2$ (c) $-(5)^{-2}$ (d) 5^{-2}
-
- 15** The additive inverse of the number $(-3)^{-2}$ is *(El Gamaliya - Dakahlia 25)*
 (a) 3^{-2} (b) -3^{-2} (c) $(-3)^2$ (d) $-(-3)^2$
-
- 16** If $3^m = 81$, then what is the value of m ? *(Al Agamy - Alexandria 25)*
 (a) 4 (b) 27 (c) -4 (d) 2
-
- 17** $2^3 \times 2^4 = \dots\dots\dots$ *(Khanka - Qalyubia 25)*
 (a) 2^7 (b) 2^{12} (c) 4^7 (d) 4^{12}
-
- 18** If $2^5 \times a = 2^{10}$, then the value of (a) equals *(Al Hamoul - Kafr El Sheikh 25)*
 (a) 2^5 (b) 2^2 (c) 2^{15} (d) 2
-
- 19** If $5^{12} \div a = 5^4$, then a = *(Obour - Qalyubia 25)*
 (a) 1^8 (b) 1^3 (c) 5^8 (d) 5^3
-
- 20** If $a = 3$, then $a^{-2} = \dots\dots\dots$ *(East Mansoura - Dakahlia 25)*
 (a) $\frac{1}{9}$ (b) 9 (c) -9 (d) -6
-
- 21** $b^{-2} \times b^2 = \dots\dots\dots$ *(Aga - Dakahlia 25)*
 (a) -1 (b) b^4 (c) b (d) 1
-
- 22** If $2^{-3} \times a = 1$, then a = *(Sars El Layan - Menoufia 25)*
 (a) 2^3 (b) 3^2 (c) 2^{-3} (d) 3^{-2}
-
- 23** Which of the following expresses $\frac{x^3}{x^{-2}}$? *(South Giza - Giza 25)*
 (a) x^5 (b) x^6 (c) x (d) x^{-5}

- 24 $a^{-1} \times a^5 = \dots\dots\dots$ (Hehia - Sharkia 25)
 (a) a^2 (b) a^6 (c) a^4 (d) a^7
-
- 25 What is the numerical value of the expression $a^2 \times b^{-2}$ where $a = 3$, $b = 2$? (Mashtool El Souk - Sharkia 25)
 (a) $\frac{9}{4}$ (b) 6 (c) 6^0 (d) $\frac{4}{9}$
-
- 26 If a and b are two positive integers and: $a^b = 81$, then the smallest value for the expression $a + b$ equals (East Zagazig - Sharkia 25)
 (a) 11 (b) 7 (c) 4 (d) 5
-
- 27 If $a = \frac{-3}{4}$, $b = 2$, then $a^b = \dots\dots\dots$ (Al Husseinia - Sharkia 25)
 (a) $\frac{3}{4}$ (b) $\frac{9}{16}$ (c) $\frac{-9}{16}$ (d) $\frac{-3}{4}$
-
- 28 $\frac{x^7 \times x^2}{x^3 \times x^5} = \dots\dots\dots$ (Al Wasta - Beni Suef 25)
 (a) x (b) x^3 (c) x^4 (d) x^{14}
-
- 29 $\frac{7^8 \times 7^3 \times 7}{7^{10}} = \dots\dots\dots$ (Edfu - Aswan 25)
 (a) 1 (b) 7 (c) 7^2 (d) 7^3
-
- 30 Half of the number 2^6 is (Luxor - Luxor 25)
 (a) 1^6 (b) 1^3 (c) 2^3 (d) 2^5
-
- 31 Half of the number $4^3 = \dots\dots\dots$ (Birkat Al Saba - Menoufia 25)
 (a) 2^4 (b) 2^3 (c) 2^5 (d) 4^2
-
- 32 If half of the number 2^{20} is 2^x , then $x = \dots\dots\dots$ (Faraskur - Damietta 25)
 (a) 10 (b) 40 (c) 21 (d) 19
-
- 33 If double the number 2^{50} equals 2^x , then $x = \dots\dots\dots$ (Abu Hammad - Sharkia 25)
 (a) 25 (b) 49 (c) 100 (d) 51
-
- 34 $\frac{1}{3}$ of the number $9^3 = \dots\dots\dots$ (Bulaq Al Dakrur - Giza 25)
 (a) 8^3 (b) 3^5 (c) 3^6 (d) 1
-
- 35 Three times the number $3^6 = \dots\dots\dots$ (Basyoun - Gharbia 25)
 (a) 3^4 (b) 9^5 (c) 3^7 (d) 3^{15}

- 36 $3^{-1} + 3^{-1} + 3^{-1} = \dots\dots\dots$ (Al Manzala - Dakahlia 25)
 (a) 3^{-2} (b) 3^{-3} (c) 9^{-3} (d) 1
-
- 37 Which of the following equals $8x^{-1}$? (Central Cairo - Cairo 25)
 (a) $\frac{1}{8}x$ (b) $\frac{1}{8x}$ (c) $\frac{8}{x}$ (d) $8x$
-
- 38 If $a = 2$, $b = -3$, then the numerical value of the expression : $a b^a = \dots\dots\dots$ (East Mahalla - Gharbia 25)
 (a) 18 (b) 9 (c) - 18 (d) - 9
-
- 39 Which of the following equals 2.4×10^4 ? (Bahr Al Baqar - Port Said 25 / Minya - Minya 25)
 (a) 24000 (b) 2400 (c) 240 (d) 24
-
- 40 The number 2.4×10^{-4} in standard form is (Armant - Luxor 25)
 (a) 240 (b) 2400 (c) 24000 (d) 0.00024
-
- 41 Which of the following numbers is in scientific notation? (Dekernes - Dakahlia 25)
 (a) 13×10^6 (b) 32×10^{-3} (c) $3.2 \times 10^{4.6}$ (d) 4.12×10^6
-
- 42 Which of the following numbers is in scientific notation? (Farshut - Qena 25)
 (a) 10×10^3 (b) -1.5×10^{-4}
 (c) 0.5×10^3 (d) -0.7×10^5
-
- 43 The number 790000 in scientific notation is (East Mahalla - Gharbia 25)
 (a) 7.9×10^4 (b) 7.9×10^5
 (c) 7.9×10^{-5} (d) 7.9×10^{-4}
-
- 44 If the world population is about 8 billion people , then the scientific notation for the world population is (West Faiyum - Faiyum 25)
 (a) 8×10^{10} (b) 8×10^9 (c) 8×10^8 (d) 80×10^8
-
- 45 Which of the following equals - 0.00025 ? (East Shubra Al Khaimah - Qalyubia 25)
 (a) -2.5×10^4 (b) 2.5×10^{-4}
 (c) -2.5×10^{-4} (d) 2.5×10^{-5}
-
- 46 If the number 250000 in scientific notation equals 2.5×10^m , then $m = \dots\dots\dots$ (Dahab - South Sinai 25)
 (a) - 4 (b) - 5 (c) 4 (d) 5

- 47 If 16 million in scientific notation is 1.6×10^b , then $b = \dots\dots\dots$ (Abu Kabir - Sharkia 25)
 (a) 6 (b) 7 (c) 8 (d) 9
-
- 48 If $7.5 \times 10^n = 0.000075$, then $n = \dots\dots\dots$
 (Qutur - Gharbia 25 / Khosous - Qalyubia 25 / Al Ghanayem - Assiut 25)
 (a) 5 (b) - 5 (c) 4 (d) - 4
-
- 49 If $48 \times 10^3 = 4.8 \times 10^k$, then $k = \dots\dots\dots$ (Rashid - Beheira 25)
 (a) 4 (b) 3 (c) - 4 (d) - 3
-
- 50 If the number $a \times 10^{-9}$ is written in scientific notation, which of the following could be the value of a ? (Mashtool El Souk - Sharkia 25 / Obour - Qalyubia 25)
 (a) - 9 (b) 10 (c) - 10 (d) - 19
-
- 51 If the speed of a rocket is 45000 km/hour, then the speed of the rocket = $\dots\dots\dots$ m/hour (Qift - Qena 25)
 (a) 4.5×10^3 (b) 4.5×10^4 (c) 4.5×10^6 (d) 4.5×10^7
-
- 52 $60 \times 3000 = \dots\dots\dots$ (Al Qusiya - Assiut 25)
 (a) 1.8×10^6 (b) 18×10^6 (c) 1.8×10^5 (d) 1.8×10^{-6}
-
- 53 $(5.5 \times 10^6) + (2 \times 10^6) = \dots\dots\dots$ (Tala - Menoufia 25)
 (a) 5.7×10^5 (b) 5.7×10^6 (c) 7.5×10^5 (d) 7.5×10^6
-
- 54 $\sqrt{36} = \dots\dots\dots$ (Sheikh Zayed - Giza 25)
 (a) 6 (b) - 6 (c) ± 6 (d) ± 36
-
- 55 $-\sqrt{49} = \dots\dots\dots$ (Sadat - Menoufia 25)
 (a) 7 (b) ± 7 (c) - 7 (d) 49
-
- 56 $7 - \sqrt{25} = \dots\dots\dots$ (Bani Mazar - Minya 25)
 (a) 2 (b) ± 5 (c) ± 2 (d) 5
-
- 57 $\sqrt[3]{-\frac{27}{125}} = \dots\dots\dots$ (Minya - Minya 25)
 (a) $\frac{3}{5}$ (b) $\frac{9}{5}$ (c) $-\frac{5}{3}$ (d) $-\frac{3}{5}$
-
- 58 Which of the following equals $\sqrt[3]{(-8)^2}$? (Khosous - Qalyubia 25 / Kafr El Zayat - Gharbia 25)
 (a) - 4 (b) - 2 (c) 2 (d) 4

- 59 Which of the following equals $\sqrt[3]{\sqrt{(-8)^2}}$? (Armant - Luxor 25)
 (a) 2 (b) 4 (c) 8 (d) 64
-
- 60 $\sqrt[3]{1000} = 6 + \sqrt{\dots\dots\dots}$ (Kom Hamada - Beheira 25)
 (a) 36 (b) 10 (c) 16 (d) 4
-
- 61 $\sqrt[3]{10 + \dots\dots\dots} = 3$ (Ausim - Giza 25)
 (a) 27 (b) 17 (c) 37 (d) 7
-
- 62 $\sqrt{5^2 - 3^2} = 5 - \dots\dots\dots$ (Manfalut - Assiut 25)
 (a) -3 (b) 3 (c) 1 (d) 4
-
- 63 $\sqrt{25} + \sqrt[3]{-125} = \dots\dots\dots$ (Rashid - Beheira 25)
 (a) 0 (b) -10 (c) 5 (d) 10
-
- 64 $\sqrt{4^2} - \sqrt[3]{-27} = \dots\dots\dots$ (Abdeen - Cairo 25)
 (a) 1 (b) 7 (c) 17 (d) 24
-
- 65 $\sqrt{9x^2} = \dots\dots\dots$ (West Faiyum - Faiyum 25 / Aga - Dakahlia 25)
 (a) $3|x|$ (b) $3x^2$ (c) $9x$ (d) $3x$
-
- 66 What is the multiplicative inverse of the number $-\sqrt{\frac{9}{25}}$ in simplest form? (Kafr El Dawar - Beheira 25)
 (a) $-\frac{3}{5}$ (b) $\frac{3}{5}$ (c) $-\frac{5}{3}$ (d) $\frac{5}{3}$
-
- 67 The multiplicative inverse of the number $\sqrt[3]{\frac{8}{27}}$ is $\dots\dots\dots$ (New Damietta - Damietta 25)
 (a) $\frac{4}{9}$ (b) $-\frac{2}{3}$ (c) $-\frac{3}{2}$ (d) $\frac{3}{2}$
-
- 68 The sum of the two square roots of the number 36 = $\dots\dots\dots$ (Abu Qurqas - Minya 25 / Al Idwa - Minya 25)
 (a) 0 (b) ± 6 (c) -6 (d) 6
-
- 69 If $a = -\frac{1}{8}$, $b = -\frac{9}{2}$, then $\sqrt{ab} = \dots\dots\dots$ (Shebin El Kom - Menoufia 25)
 (a) $\frac{9}{8}$ (b) $\frac{9}{16}$ (c) $\frac{3}{4}$ (d) $-\frac{3}{4}$
-
- 70 If $\sqrt{m} = \sqrt[3]{27}$, then $m = \dots\dots\dots$ (Menouf - Menoufia 25)
 (a) 3 (b) 6 (c) 9 (d) 81

- 71 If $\sqrt[3]{x} = -\sqrt{9}$, then $x = \dots\dots\dots$ (West Tanta - Gharbia 25)
 (a) 3 (b) -3 (c) -9 (d) -27
-
- 72 The solution set of the equation : $x^2 = 25$ in $\mathbb{Z}$ is $\dots\dots\dots$ (Armant - Luxor 25)
 (a) {5} (b) {-5} (c) {-5, 5} (d) $\emptyset$
-
- 73 If $x^2 + 6 = 7$, then $x = \dots\dots\dots$ (Ayat - Giza 25)
 (a) 1 (b) -1 (c) ± 1 (d) 7
-
- 74 If $4x^2 = 1$, then $x = \dots\dots\dots$ (Faqous - Sharkia 25)
 (a) $\frac{1}{2}$ (b) $\pm \frac{1}{2}$ (c) $-\frac{1}{2}$ (d) $\emptyset$
-
- 75 What is the solution set of the equation : $2x^2 - 1 = 17$ in $\mathbb{Q}$? (Al Ghanayem - Assiut 25)
 (a) {3} (b) {3, -3} (c) {-3} (d) {9}
-
- 76 If $\sqrt{x} = 5$, then $x = \dots\dots\dots$ (Abnoub - Assiut 25 / East Nasr City - Cairo 25)
 (a) 5 (b) -25 (c) 25 (d) ± 25
-
- 77 If $x^3 = -27$, then $x = \dots\dots\dots$ (Inspection - Port Said 25 / Abu Homos - Beheira 25)
 (a) -3 (b) -9 (c) 3 (d) 9
-
- 78 If $x^3 - 26 = 1$, what is the value of x ? (10th of Ramadan - Sharkia 25)
 (a) 3 (b) -3 (c) 27 (d) -27
-
- 79 If $\sqrt[3]{a} = 8$, then $a = \dots\dots\dots$ (Samannoud - Gharbia 25 / Obour - Qalyubia 25)
 (a) 2 (b) -2 (c) 8^2 (d) 8^3
-
- 80 If $x = 5^3$, then $\sqrt[3]{x} = \dots\dots\dots$ (Luxor - Luxor 25)
 (a) 4 (b) 3 (c) 5 (d) 5^2
-
- 81 If $x^3 = -125$, what is the value of x^2 ? (Rahmaniya - Beheira 25)
 (a) -25 (b) 125 (c) 25 (d) -5
-
- 82 $\sqrt[3]{a^6} = \dots\dots\dots$ (Ain Shams - Cairo 25)
 (a) a (b) a^3 (c) a^9 (d) a^2
-
- 83 $\sqrt[3]{x^{12}} = \sqrt{\dots\dots\dots}$ (Basyoun - Gharbia 25)
 (a) x^4 (b) x^6 (c) x^8 (d) x^{12}

84 If $x^2 + 3 = 67$, then $2x = \dots\dots\dots$

(East Mahalla - Gharbia 25)

(a) 64

(b) ± 16

(c) 16

(d) - 16

85 A cube with a volume of 27 cm^3 , then its edge length = $\dots\dots\dots$ cm

(Riyadh - Kafr El Sheikh 25)

(a) 81

(b) 27

(c) 9

(d) 3

Second Essay questions

1 Simplify each of the following :

① $\frac{2^7 \times 2^8}{2^{11}}$

(Matariya - Cairo 25)

③ $\frac{7^{-4} \times 7^3}{7^{-1}}$

(Abu Qurqas - Minya 25)

⑤ $\frac{6^8 \times 6^3 \times 6}{6^{10}}$

(Warraq - Giza 25)

⑦ $\frac{(-4)^7 \times (-4)^6}{(-4)^{-3} \times (-4)^{14}}$

(Hestia - Sharkia 25)

⑨ $\frac{7^9 \times 7^{-3}}{7^{-2} \times 7^6}$

(Bani Ebeid - Dakahlia 25)

⑪ $\frac{(-x)^6 \times x^3}{(-x)^5 \times (-x)^2}$

② $\frac{(-3)^5 \times (-3)^2}{(-3)^6}$

(Kerdasa - Giza 25)

④ $\frac{4^2 \times 4^8}{4 \times 4^6}$

(Sinnuris - Faiyum 25)

⑥ $\frac{7^9 \times 7^2 \times 7}{7^7 \times 7^4}$

(Kom Hamada - Beheira 25)

⑧ $\frac{(-3)^4 \times 3^4}{(-3)^6 \times 3}$

(Inspection - Beheira 25)

⑩ $\frac{a^7 \times a^5}{a^{10}}$

(Riyadh - Kafr El Sheikh 25)

(Mashtool El Souk - Sharkia 25 / Obour - Qalyubia 25)

⑫ $\frac{a^5 \times a^{-2}}{a \times a^2}$

(Abu Kabir - Sharkia 25)

⑬ $\frac{k^5 \times k^{-3}}{k^{-1} \times k^{-2}}$

, then find the value of the result when $k = 2$

(Al Haram - Giza 25)

⑭ $\frac{y \times y^4 \times y^5}{y^{-2} \times y^8}$

(Tel El Kebir - Ismailia 25 / Al Zayniyah - Luxor 25)

⑮ $\frac{a^7 \times a^8 \times a^2}{a^3 \times a^9 \times a^5}$

(Inspection - Aswan 25)

⑯ $\left(\frac{3^6 \times 3^{-2}}{3^4 \times 3^{-1}}\right)^{-1}$

(El Gamaliya - Dakahlia 25)

2 Write the result of each of the following in scientific notation :

① $(0.5 \times 10^4) + (5 \times 10^3)$

(Akhmim - Sohag 25)

② $(5.2 \times 10^9) - (8.5 \times 10^8)$

(Abu Tig - Assiut 25)

③ $(5.5 \times 10^5) \times (8 \times 10^3)$

(Akhmim - Sohag 25)

④ $(9 \times 10^7) \div (4.5 \times 10^{-2})$

(El Gamaliya - Dakahlia 25)

- 3** The temperature at the center of the sun is about 14 million degrees Celsius.

Write this temperature degree in scientific notation.

(Naqada - Qena 25)

- 4** Simplify each of the following to the simplest form :

① $\sqrt{\frac{81}{49}} + \left(\frac{3}{4}\right)^0 + \sqrt[3]{\frac{125}{343}}$

(Sheikh Zayed - Giza 25 / Youssef Al-Siddiq - Faiyum 25)

② $\sqrt{\frac{81}{625}} \times \left(\frac{5}{3}\right)^2 \times \left(\frac{5}{7}\right)^0$

(Al Agamy - Alexandria 25)

③ $\sqrt[3]{\frac{-125}{64}} \times \sqrt{\frac{16}{25}} + \left(\frac{4}{5}\right)^0$

(Samannoud - Gharbia 25 / Kafr El Zayat - Gharbia 25)

④ $\sqrt{\frac{144}{100}} \times \left(\frac{5}{12}\right)^2 \times \sqrt[3]{64 \times 10^3}$

(Tala - Menoufia 25)

⑤ $\sqrt[3]{\frac{125}{27}} \times \sqrt{\frac{9}{25}} \times \left(\frac{2}{3}\right)^{-2} \times 2^2$

(Diarb Negm - Sharkia 25)

- 5** Find the value of x in each of the following :

① $x^2 - 1 = 15$

(Al Husseinia - Sharkia 25)

② $x^3 - 1 = 7$

(Salhia El Gedida - Sharkia 25)

- 6** Find the solution set for each of the following equations in $\mathbb{Z}$:

① $2x^2 = 50$

(Assiut - Assiut 25)

② $3x^2 - 5 = 43$

(Al Haram - Giza 25)

③ $3x^2 + 1 = 13$

(Kafr Shukr - Qalyubia 25 / Abu Hammad - Sharkia 25)

④ $x^3 + 7 = 8$

(Minya - Minya 25)

⑤ $3(x^3 - 2) = 18$

(Rashid - Beheira 25)

⑥ $3x^3 - 3 = 2x^3 + 5$

(Heliopolis - Cairo 25)

⑦ $(x - 1)^3 = 125$

(Kharga - New Valley 25)

Important questions on unit two from educational directorate exams



First multiple choice questions

- 1 The inequality that expresses that the maximum load of an elevator is six individuals is *(North - Giza 25)*
(a) $x > 6$ (b) $x \geq 6$ (c) $x < 6$ (d) $x \leq 6$
-
- 2 The inequality that expresses that the temperature x does not exceed 30 is *(Tama - Sohag 25)*
(a) $x < 30$ (b) $x \leq 30$ (c) $x > 30$ (d) $x \geq 30$
-
- 3 The number x is greater than 5 is expressed by the inequality *(Abu Hammad - Sharkia 25)*
(a) $2x < 5$ (b) $x < 5$ (c) $x > 5$ (d) $2x > 5$
-
- 4 The inequality that expresses that three times the number x is less than 4 is *(Samannoud - Gharbia 25)*
(a) $3x > 4$ (b) $3x < 4$ (c) $4x > 3$ (d) $4x \geq 3$
-
- 5 The inequality that expresses that double the number x added to 3 is less than 1 is *(Al Husseinia - Sharkia 25)*
(a) $2x + 3 < 1$ (b) $2x < 3$ (c) $2x + 3 > 1$ (d) $x + 3 < 1$
-
- 6 A car's speed does not exceed 60 , so the inequality that expresses this situation is *(Deir Mawas - Minya 25)*
(a) $x < 60$ (b) $x \geq 60$ (c) $x > 60$ (d) $x \leq 60$
-
- 7 What is the inequality that expresses that the number x is greater than 6 ? *(Amriya - Alexandria 25)*
(a) $x \leq 6$ (b) $x \geq 6$ (c) $x > 6$ (d) $x < 6$
-
- 8 If $-x > 3$, then *(South Giza - Giza 25)*
(a) $x > 3$ (b) $x < -3$ (c) $x > -3$ (d) $x < 3$
-
- 9 Which of the following inequalities has one of its solutions is $(x = -5)$ in $\mathbb{Q}$? *(Naqada - Qena 25)*
(a) $x - 2 \geq -4$ (b) $2x > -8$ (c) $x + 2 > -3$ (d) $-x > 4$

- 10** If $x - 2 > 4$, then $x + 1$ can be equal to *(East Mahalla - Gharbia 25)*
 (a) 8 (b) 7 (c) 6 (d) 5
-
- 11** The solution set of the inequality : $5x + 1 \leq 11$ in $\mathbb{N}$ is *(Tala - Menoufia 25)*
 (a) $\{2, 1, 0\}$ (b) $\{1, 0\}$ (c) $\{2, 1\}$ (d) $\emptyset$
-
- 12** The solution set of the inequality : $2x < 1$ in $\mathbb{Z}^+$ is *(Banha - Qalyubia 25)*
 (a) $\{0\}$ (b) $\{-1\}$ (c) $\{\frac{1}{2}\}$ (d) $\emptyset$
-
- 13** The solution set of the inequality : $2x - 1 > 3$ in $\mathbb{Z}$ is *(Al Zayniyah - Luxor 25)*
 (a) $\{3, 4, 5, \dots\}$ (b) $\{2, 1, 0, \dots\}$
 (c) $\{3, 2, 1, \dots\}$ (d) $\{3, 5, 7, \dots\}$
-
- 14** One of the solutions of the inequality : $3 - x < 1$ in $\mathbb{Z}$ is *(Qutur - Gharbia 25)*
 (a) 0 (b) 1 (c) 2 (d) 3
-
- 15** If $x \in \mathbb{Z}$, which of the following is one of the solutions of the inequality : $1 + 2x < -3$? *(Rahmaniya - Beheira 25)*
 (a) 0 (b) -1 (c) -2 (d) -3
-
- 16** If $x \in \mathbb{Z}$, then one of the solutions of the inequality : $3x - 4 \geq 6$ is *(Sahel Selim - Assiut 25)*
 (a) -5 (b) 5 (c) -3 (d) 3
-
- 17** $a \times \dots = -3ab$ *(El-Qusaiya - Assiut 25)*
 (a) -3 (b) $3b$ (c) $-3a$ (d) $-3b$
-
- 18** $6x^2y = 2x \times \dots$ *(Luxor - Luxor 25)*
 (a) $6xy$ (b) $3x$ (c) $3y$ (d) $3xy$
-
- 19** $x \times 5x = \dots$ *(Dar El Salam - Cairo 25)*
 (a) $6x^2$ (b) $5x^2$ (c) $5x$ (d) $6x$
-
- 20** $4x \times x^2 = \dots$ *(Al Hamoul - Kafr El Sheikh 25)*
 (a) x^2 (b) $4x^2$ (c) x^3 (d) $4x^3$
-
- 21** $(-4a^3)(-5a) = \dots$ *(Sars El Layan - Menoufia 25)*
 (a) $20a^3$ (b) $20a^4$ (c) $-20a^3$ (d) $-20a^4$

- 22 $(5x^2y)(2xy^2) = \dots\dots\dots$ (Tukh - Qalyubia 25)
 (a) $7x^3y^3$ (b) $10x^3y^3$ (c) $7x^2y^2$ (d) $10x^3$
-
- 23 If $6x^{12} = (3x^n) \times 2x^4$, then $n = \dots\dots\dots$ (Samalut - Minya 25)
 (a) 8 (b) 6 (c) 5 (d) 3
-
- 24 If $(-2x^3)(x) = ax^n$, then $a + n = \dots\dots\dots$ (Qutur - Gharbia 25)
 (a) -3 (b) -2 (c) 2 (d) 3
-
- 25 If the dimensions of a rectangle are 5 y , 3 y units of length , then its area = $\dots\dots\dots$ square units (East Nasr City - Cairo 25)
 (a) 16 y (b) $15y^2$ (c) $8y^2$ (d) 8 y
-
- 26 If the edge length of a cube is 3 x , then its volume = $\dots\dots\dots$ units of volume. (Fashn - Beni Suef 25)
 (a) $9x^3$ (b) $27x^3$ (c) $9x^2$ (d) $3x^3$
-
- 27 $a(a + 5) = \dots\dots\dots$ (Shebin El Kom - Menoufia 25)
 (a) $a^2 + a$ (b) $a^2 + 5$ (c) $2a + 5$ (d) $a^2 + 5a$
-
- 28 $-4a(3a^2 - 2a + 1) = \dots\dots\dots$ (Minya - Minya 25)
 (a) $12a^3 + 8a^2 - 4a$ (b) $-12a^3 + 8a^2 - 4a$
 (c) $-12a^3 - 8a^2 + 4a$ (d) $12a^3 - 8a^2 - 8a$
-
- 29 A rectangular garden with a length of 30 meters and a width of x meters , if its length increased by x meters , its area increased by 81 square meters , then the value of x equals $\dots\dots\dots$ (Tala - Menoufia 25)
 (a) 6 (b) 9 (c) 15 (d) 18
-
- 30 What is the number of terms in the product of $(x - 3)(x + 2)$ in simplest form ? (North - Port Said 25)
 (a) 1 (b) 2 (c) 3 (d) 4
-
- 31 The number of terms in the product of $(x - 3)(x + 3)$ in simplest form is $\dots\dots\dots$ (Bahr Al Baqar - Port Said 25)
 (a) 1 (b) 2 (c) 3 (d) 4
-
- 32 $(x - 2)(x - 8) = \dots\dots\dots$ (Central - Alexandria 25)
 (a) $x^2 + 10x - 16$ (b) $x^2 - 10x + 16$
 (c) $x^2 + 16$ (d) $x^2 - 10x - 16$

- 33** If $(X - 6)(X + 2) = X^2 - mX - 12$, then $m = \dots\dots\dots$ (East Zagazig - Sharkia 25)
 (a) 4 (b) -4 (c) 12 (d) 6
-
- 34** If $(2X + 3)(X - 5) = 2X^2 + bX - 15$, then $b = \dots\dots\dots$ (Samannoud - Gharbia 25)
 (a) -7X (b) -7 (c) 7X (d) 7
-
- 35** If $(4X + y)(X + 3y) = 4X^2 + aXy + by^2$, what is the value of : $a + b$? (Mashtool El Souk - Sharkia 25)
 (a) 24 (b) 12 (c) 7 (d) 16
-
- 36** The coefficient of ab in the product of $(2a - 3b)$ by $(a - b)$ equals $\dots\dots\dots$ (Manfalut - Assiut 25)
 (a) -5 (b) -6 (c) 5 (d) -4
-
- 37** $(X - 3)(X + 4) = X^2 + \dots\dots\dots - 12$ (Khosous - Qalyubia 25)
 (a) 7X (b) 12X (c) X (d) -12X
-
- 38** If $(X - 1)(X - 5) = X^2 - 6X + m$, what is the value of m ? (Aga - Dakahlia 25)
 (a) 15 (b) -6 (c) -5 (d) 5
-
- 39** If $(-X - 6)^2 = X^2 + bX + 36$, then $b = \dots\dots\dots$ (Tala - Menoufia 25)
 (a) -6 (b) -12 (c) 12 (d) 6
-
- 40** The expansion of the expression $(X + 3)^2$ is $\dots\dots\dots$ (Al Hamoul - Kafr El Sheikh 25)
 (a) $X^2 + 5X + 6$ (b) $X^2 + 6X + 9$
 (c) $X^2 + 5X + 9$ (d) $X^2 + 3X + 9$
-
- 41** What is the coefficient of ab in the expansion of the expression : $(2a - 5b)^2$? (Fashn - Beni Suef 25)
 (a) 10 (b) 20 (c) -10 (d) -20
-
- 42** If $(3X + 2)^2 = 9X^2 + aX + b$, then $a + b = \dots\dots\dots$ (Dekernes - Dakahlia 25)
 (a) 16 (b) 10 (c) 8 (d) 6
-
- 43** If: $(X + 3)(X - 3) = X^2 + bX + c$, then $b = \dots\dots\dots$ (Central - Cairo 25)
 (a) 9 (b) -9 (c) 6 (d) 0
-
- 44** If $(X - k)(X + k) = X^2 - 9$, then $k = \dots\dots\dots$ (Belqas - Dakahlia 25)
 (a) -2 (b) ± 3 (c) -9 (d) 9

- 45 $(a - 4)(a + 4) + 16 = \dots\dots\dots$ (Rashid - Beheira 25)
 (a) 16 (b) a^2 (c) $2a$ (d) -16
-
- 46 If $(X - 4)(X + 4) = X^2 - k$, then $k = \dots\dots\dots$ (El Gamaliya - Dakahlia 25)
 (a) 8 (b) 16 (c) -8 (d) -16
-
- 47 If $(y - X) = 8$, $(y + X) = 3$, then $y^2 - X^2 = \dots\dots\dots$ (Faraskur - Damietta 25)
 (a) -5 (b) 5 (c) 24 (d) -11
-
- 48 If $(X - 2)(X + 2) - 5 = 0$ where $X < 0$, then $X = \dots\dots\dots$ (West Faiyum - Faiyum 25)
 (a) -9 (b) -2 (c) -1 (d) -3
-
- 49 If $X - y = 7$, $X^2 - y^2 = 35$, what is the value of $X + y$? (Zifta - Gharbia 25)
 (a) 245 (b) 5 (c) 18 (d) 42
-
- 50 The solution set of the equation: $(X - 3)(X + 3) = 0$ in $\mathbb{Q}$ is $\dots\dots\dots$ (New Cairo - Cairo 25)
 (a) $\{3\}$ (b) $\{-3\}$ (c) $\emptyset$ (d) $\{-3, 3\}$
-
- 51 The result of subtracting : $(a - b)^2$ from $(a + b)^2$ is $\dots\dots\dots$ (Mit Ghamr - Dakahlia 25 / Abu Tesht - Qena 25)
 (a) $-4ab$ (b) $4ab$ (c) $-2ab$ (d) $2ab$
-
- 52 $16X^4 \div (2X) = \dots\dots\dots$ (Hawamdia - Giza 25)
 (a) $8X$ (b) $8X^3$ (c) $8X^2$ (d) 8
-
- 53 $6X^3 \div (-2X^3) = \dots\dots\dots$ (Aga - Dakahlia 25)
 (a) 1 (b) -3 (c) $-3X$ (d) 3
-
- 54 $27n^2b^5 \div (3nb^3) = \dots\dots\dots$ (Quesna - Menoufia 25)
 (a) $9nb^2$ (b) $9nb$ (c) $9n^3b^8$ (d) 9
-
- 55 $-4Xy^2 \div (Xy) = \dots\dots\dots$ (Sheikh Zayed - Giza 25 / Sadat - Menoufia 25)
 (a) Xy (b) $-4Xy$ (c) $-4y$ (d) -4
-
- 56 $\dots\dots\dots \div (9X^2y) = 3Xy^2$ (Dahab - South Sinai 25 / Samannoud - Gharbia 25)
 (a) $3Xy^2$ (b) $3Xy$ (c) $27X^3y^3$ (d) $27Xy$
-
- 57 The quotient of : $15X^3y^5$ divided by $-3X^2y^4$ is $\dots\dots\dots$ (Abdeen - Cairo 25)
 (a) $45X^2y^9$ (b) $5X^5y^9$ (c) $-5Xy$ (d) $5Xy$

- 58 $(5x^2 \div x) - 5x = \dots\dots\dots$ (Mit Ghamr - Dakahlia 25)
 (a) 0 (b) $4x$ (c) $-4x$ (d) -3
-
- 59 $(x^2 + x) \div x = \dots\dots\dots$ (El Wayli - Cairo 25)
 (a) $x^3 + x^2$ (b) x (c) $x + 1$ (d) $2x$
-
- 60 $(x^3 + 4x^2) \div x = \dots\dots\dots$ (Damanhour - Beheira 25)
 (a) $x + 4$ (b) $x^2 + 4x$ (c) $5x$ (d) $x^4 + 4x$
-
- 61 $(8x^3 + 4x^2) \div (4x^2) = \dots\dots\dots$ (Kafr Saqr - Sharkia 25)
 (a) $4x + 1$ (b) $2x + 1$ (c) $2x$ (d) $3x^3$
-
- 62 $\frac{5x^2 + 3x}{x} = \dots\dots\dots$ (Bani Ebeid - Dakahlia 25)
 (a) $5x + 3$ (b) $5x - 3$ (c) 8 (d) $5x$
-
- 63 $(x^3 + x^2 + x) \div x = \dots\dots\dots$ (Sharabia - Cairo 25 / Khosous - Qalyubia 25 / Al Zayniyah - Luxor 25)
 (a) $x^3 + x^2$ (b) $x^2 + x$ (c) $x^2 + x + 1$ (d) 0
-
- 64 What is the quotient of the following : $\frac{18x^3 + 12x^2 - 6x}{-6x}$? (Minya - Minya 25)
 (a) $-3x^2 + 2x + 1$ (b) $3x^2 + 2x + 1$
 (c) $3x^2 - 2x - 1$ (d) $-3x^2 - 2x + 1$
-
- 65 The area of a rectangle is $(x^2 + 6x + 8)$ square units and its length is $(x + 4)$ units of length , then its width = $\dots\dots\dots$ units of length (West Faiyum - Faiyum 25 / Abu Tesht - Qena 25)
 (a) x (b) $x + 2$ (c) $x - 2$ (d) $x - 4$
-
- 66 $(12a + 4) \div 4 = \dots\dots\dots$ (Amriya - Alexandria 25 / Basyoun - Gharbia 25)
 (a) $3a$ (b) $3a - 4$ (c) $3a + 1$ (d) $3a + 4$
-
- 67 If $\frac{2x+a}{x+5} = 2$, then $a = \dots\dots\dots$ (Al Idwa - Minya 25)
 (a) 2 (b) 3 (c) 5 (d) 10
-
- 68 If $\frac{3x+15}{x-a} = 3$, then $a = \dots\dots\dots$ (Sinnuris - Faiyum 25)
 (a) -5 (b) -3 (c) 3 (d) 5
-
- 69 If $a = \frac{x-4}{4-x}$, then $a = \dots\dots\dots$ (Kafr Shukr - Qalyubia 25)
 (a) -2 (b) -1 (c) 1 (d) 2

70 $(a^2 - a) \div (a - 1) = \dots\dots\dots$

(Birkat Al Saba - Menoufia 25)

- (a) $a + 1$ (b) a (c) a^2 (d) $a - 1$

71 If $(x - 3)$ is one of the factors of the expression $(x^2 - 5x + 6)$, then the other factor is

(North Giza - Giza 25)

- (a) $x - 2$ (b) $x - 6$ (c) $x + 2$ (d) $x - 3$

72 If $(x - 2)$ is one of the factors of the expression: $3x^2 - 7x + 2$, then the other factor is

(Nabroh - Dakahlia 25)

- (a) $3x + 1$ (b) $3x + 2$ (c) $x + 1$ (d) $3x - 1$

Second Essay questions

1 Find the solution set of each of the following inequalities :

- ① $x - 2 \geq 3$ in $\mathbb{Z}$ (South Giza - Giza 25)
 ② $3x - 7 \geq 5$ in $\mathbb{Z}$ (Itsa - Faiyum 25)
 ③ $3x - 5 < -5$ in $\mathbb{N}$ (Faqous - Sharkia 25)
 ④ $3x + 5 \leq 2x + 3$ in $\mathbb{Q}$ (Rashid - Beheira 25)
 ⑤ $5x + 3 \geq -12$ in $\mathbb{Z}$ (El-Husseiniya - Sharkia 25)
 ⑥ $3(2 - x) < 4$ in $\mathbb{Q}$ (Youssef Al-Siddiq - Faiyum 25)
 ⑦ $2(x - 3) \leq 10$ in $\mathbb{Q}$ (North Giza - Giza 25)
 ⑧ $2(x + 5) - 3 < 12$ in $\mathbb{Q}$ (Agouza - Giza 25)
 ⑨ $5 - 2x \geq 7$ in $\mathbb{N}$ (El-Gamaliya - Dakahlia 25)
 ⑩ $3 - 2x \leq -5$ in $\mathbb{Z}$ (Kafr El-Dawar - Beheira 25)
 ⑪ $2 - 3(x - 5) \geq 2$ in $\mathbb{Q}$ (Mit Ghamr - Dakahlia 25)

2 Find the expansion of each of the following :

- ① $(x + 5)^2$ (Old Cairo - Cairo 25 / Belbeis - Sharkia 25)
 ② $(2x + 3)^2$ (Abdeen - Cairo 25 / Central Cairo - Cairo 25)
 ③ $(5 - 3x)^2$

3 Find the result of each of the following in simplest form :

- ① $(x + 7)(x + 2)$ (Santa - Gharbia 25)
 ② $(x - 4)(x + 5)$ (Girga - Sohag 25 / Abu Tesht - Qena 25)
 ③ $(2x - 1)(x + 5)$ (East Mahalla - Gharbia 25)

④ $(4x + 3)(2x - 1)$

(Kafr Shukr - Qalyubia 25)

⑤ $(x + 4y)(2x - 3y)$

(Ayat - Giza 25)

⑥ $(x + 4)(2x^2 + 3x - 6)$

(Shorouk - Cairo 25)

⑦ $(x - 3)(x^2 + 3x + 9)$

(West Shubra Al Khaimah - Qalyubia 25)

4 Simplify each of the following to simplest form :

① $3x(4x - 2) + 2x(3 - 4x)$

(Al-Ryad - Kafr El-Sheikh 25)

② $4x(3x^2 + 2x + 7) - 8x^2$

(Salhia El-Gedida - Sharkia 25)

③ $(x - 6)^2 - 36$

(Maadi - Cairo 25)

④ $(2x + 5)^2 - 20x$

(Hehia - Sharkia 25)

⑤ $(x + 3)^2 - x(x + 6)$

(Montaza - Alexandria 25 / Al-Manzala - Dakahlia 25)

⑥ $(x - 3)^2 + (x + 3)(x - 3)$

(Kafr Saad - Damietta 25)

⑦ $(3x - 5)(3x + 5) + (3x - 5)^2$

(North Giza - Giza 25)

⑧ $2x(2x + 1) + 3x(x + 2)$

, then find the numerical value of the result at : $x = 2$

(Basyoun - Gharbia 25)

⑨ $(x + 6)(x - 6) + 36$

, then find the numerical value of the result when : $x = 2$

(Edfu - Aswan 25)

⑩ $(2y - 5)^2 - (2y + 5)(2y - 5)$

, then find the numerical value of the result at : $y = 1$

(Al-Fath - Assiut 25)

⑪ $(x + 4)(x - 3) - (x - 5)(x + 5)$

, then find the numerical value of the result at : $x = 7$

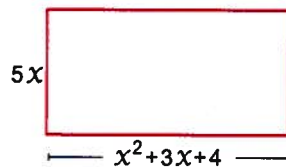
(Tala - Menoufia 25)

5 From the given figure :

Calculate the area of the rectangle.

Then calculate the numerical value of the area

when $x = 2$



(El-Badari - Assiut 25)

6 The side length of a square is $(x + 2)$ units of length. Find its area in terms of x

, then find the numerical value of the area when $x = 3$

(Naqada - Qena 25)

7 The length of a rectangle is $(x + 3)$ cm. , and its width $(x + 2)$ cm.

Find its area in terms of x

(Marg - Cairo 25)

8 Solve each of the following equations in $\mathbb{Q}$:

① $4x(x^2) = 32$

② $21 = (x+2)(x-2)$

(Qanater Al-Khayriya - Qalyubia 25)

③ $(3x-4)(3x+4) - 9x^2 + 2x = 6$

(Farshut - Qena 25)

9 Find the quotient in each of the following :

① $(12x^3 - 6x)$ divided by $6x$

(Inspection - Port Said 25)

② $(2x^3 + 4x^2 - 6x)$ divided by $2x$

(Abu Homos - Beheira 25)

③ $\frac{15x^3 + 10x^2 + 5x}{5x}$

(East Nasr City - Cairo 25)

④ $\frac{18x^3 + 12x^2 - 6x}{6x}$

(Samalut - Minya 25)

⑤ $\frac{10b^5 + 35b^2}{-5b^2}$

(Fashn - Beni Suef 25)

⑥ $\frac{15x^3y^2 + 6xy^2 - 3xy}{3xy}$

(Luxor - Luxor 25)

⑦ $(-2x^2y + 4xy^2 - 6xy)$ divided by $-2xy$

(West Faiyum - Faiyum 25 / Sheikh Zayed - Giza 25)

⑧ $(35x^4y^4 + 14x^3y^3)$ divided by $7x^2y^2$

(Dayrout - Assiut 25)

⑨ $\frac{28a^4b^4 - 21a^3b^3 - 14a^2b^2}{7a^2b^2}$

(Matariya - Cairo 25)

⑩ $(x - x^3 + x^2) \div x$

(Edfu - Aswan 25)

⑪ $(25x^4 - 15x^3 + 5x^2) \div 5x^2$

(Warraq - Giza 25)

⑫ $(10x - 16x^2 - 8x^3) \div (-2x)$

(Abnoub - Assiut 25)

10 Simplify the following expression to simplest form : $\left(\frac{3x^3 - 6x}{3x}\right) + 2$

Then find the numerical value of the resulting expression when $x = 2$ (Inspection - Sohag 25)

11 The area of a rectangle is $(35x^6 + 15x^5 + 40x^2)$ square units and one of its dimensions is $5x^2$ units of length. Find the other dimension.

(Inspection - Assiut 25)

12 Find the quotient in each of the following :

① $(x^2 + 8x - 9)$ divided by $(x - 1)$

(Sars El-Layan - Menoufia 25)

② $(2x^2 - 15 - 7x)$ divided by $(2x + 3)$

(Rahmaniya - Beheira 25)

③ $(x^3 - 1)$ divided by $(x - 1)$

(Birkat Al-Saba - Menoufia 25)

- 13** If the expression $(x - 4)$ is one of the factors of the expression $(3x^2 - 11x - 4)$,
find the other factor. *(East Mahalla - Gharbia 25)*
-
- 14** If the expression : $x^3 - 7x^2 + 8x + m$ is divisible by $x - 5$,
find : the value of m *(Tala - Menoufia 25)*
-
- 15** If the expression : $x^2 + x - m$ is divisible by $x + 4$,
find : the value of m *(Samannoud - Gharbia 25)*
-
- 16** If the area of a rectangle is $(3x^2 - 5x - 2)$ square units and one of its dimensions
is $(x - 2)$ units of length , find the other dimension in terms of x *(Al-Qusiya - Assiut 25)*

1 Choose the correct answer from the given ones :

1 A square with a diagonal length of 12 feet has an area of square feet.

- (a) 36 (b) 72 (c) 144 (d) 180

2 A trapezium with a height of 5 cm and the length of its middle base is 9 cm.

What is its area ?

- (a) 45 (b) 225 (c) 50 (d) 14

3 A rhombus with a side length of 15 cm and diagonal lengths of 18 cm and 24 cm.

What is its height ?

- (a) 28.8 cm (b) 7.2 cm (c) 14.4 cm (d) 360 cm

4 $-24x^2y^3 \div (-6x^2) = \dots\dots\dots$

- (a) $4x^2$ (b) $4y^2$ (c) $4x^4y^3$ (d) $4y^3$

5 If a and b are the square roots of the number 4 , what is the value of b + a ?

- (a) 2 a (b) 2 b (c) 1 (d) 0

2 A trapezium with an area of 280 square feet and a height of 10 feet. If the length of one of its parallel bases is 22 feet , then find the length of its other base.

3 Find the length of the diagonal of the square whose area equal to the area of a rhombus with diagonal lengths of 4 meters and 16 meters.

4 Find the solution set for each of the following in $\mathbb{Q}$:

1 $x - 2 \leq 3x + 7$

2 $2x^3 + 3 = 253$

March tests



Test

1

Total mark

15

1 Choose the correct answer from the given ones :

1 Which of the following expresses the number 10 million in scientific notation?

- (a) 1×10^6 (b) 1×10^7 (c) 10×10^7 (d) 10^{-7}

2 If $-\sqrt{9} = \sqrt[3]{x}$, then what is the value of x ?

- (a) 3 (b) -3 (c) -9 (d) -27

3 $(4x^2)(-2x^4) = \dots\dots\dots$

- (a) $2x^6$ (b) $-8x^8$ (c) $-8x^6$ (d) $-2x^6$

4 If $a = \frac{2x-6}{6-2x}$, then what is the value of a ?

- (a) 3 (b) -3 (c) -2 (d) -1

5 Which of the following inequalities has one of its solutions is $x = -3$ in $\mathbb{Q}$?

- (a) $-x > 3$ (b) $x \geq -2$ (c) $x > -3$ (d) $-x > -3$

2 Answer the following questions :

1 A square with a side length of $(x+4)$ length units. Calculate its surface area in terms of x

2 Find the solution set for the following equation in $\mathbb{Z}$:

$$3x^2 - 2 = 10$$

3 If the expression $(x^3 - x^2 - 4x + m)$ is divisible by $(x-3)$, then find the value of m

4 Find the solution set for the following inequality in $\mathbb{Q}$:

$$2(x+1) \leq 5(x-4)$$

5 Write the result of the following in scientific notation :

$$(2.14 \times 10^5) + (5.4 \times 10^4)$$

1 Choose the correct answer from the given ones :

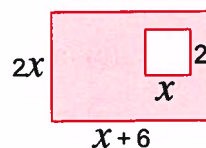
- 1 Which of the following is the multiplicative inverse of the number 5^{-2} ?
 (a) $-\frac{1}{25}$ (b) -25 (c) $\frac{1}{25}$ (d) 25
- 2 Which inequality expresses that three times the number X is greater than or equal to 4 ?
 (a) $X \geq 4$ (b) $3X \geq 4$ (c) $4X \leq 3$ (d) $3X > 4$
- 3 If $(X + 3)(X - 3) = aX^2 + bX + c$, then what is the value of $a + b + c$?
 (a) 0 (b) 1 (c) -9 (d) -8
- 4 $\div (8ab) = 4ab$
 (a) 2 (b) $12ab$ (c) $2a^2b^2$ (d) $32a^2b^2$
- 5 If a and b are the square roots of the number c , then what is the value of $a + b$?
 (a) $2a$ (b) $2b$ (c) 1 (d) zero

2 Answer the following questions :

- 1 Simplify to the simplest form : $\frac{X^{-3} \times X^5 \times (-X)^4}{X^2 \times X^{-4} \times X^6}$

Then find the numerical value when $X = 2$

- 2 Find in the simplest form the algebraic expression that represents the area of the shaded part.



- 3 If $(2X + 3)$ is a factor of the expression $(2X^2 - 15 - 7X)$, then find the other factor.
- 4 Arrange the following numbers in an ascending order :

$5\,400\,000$, 7.1×10^6 , 1.2×10^7 , 0.95×10^7

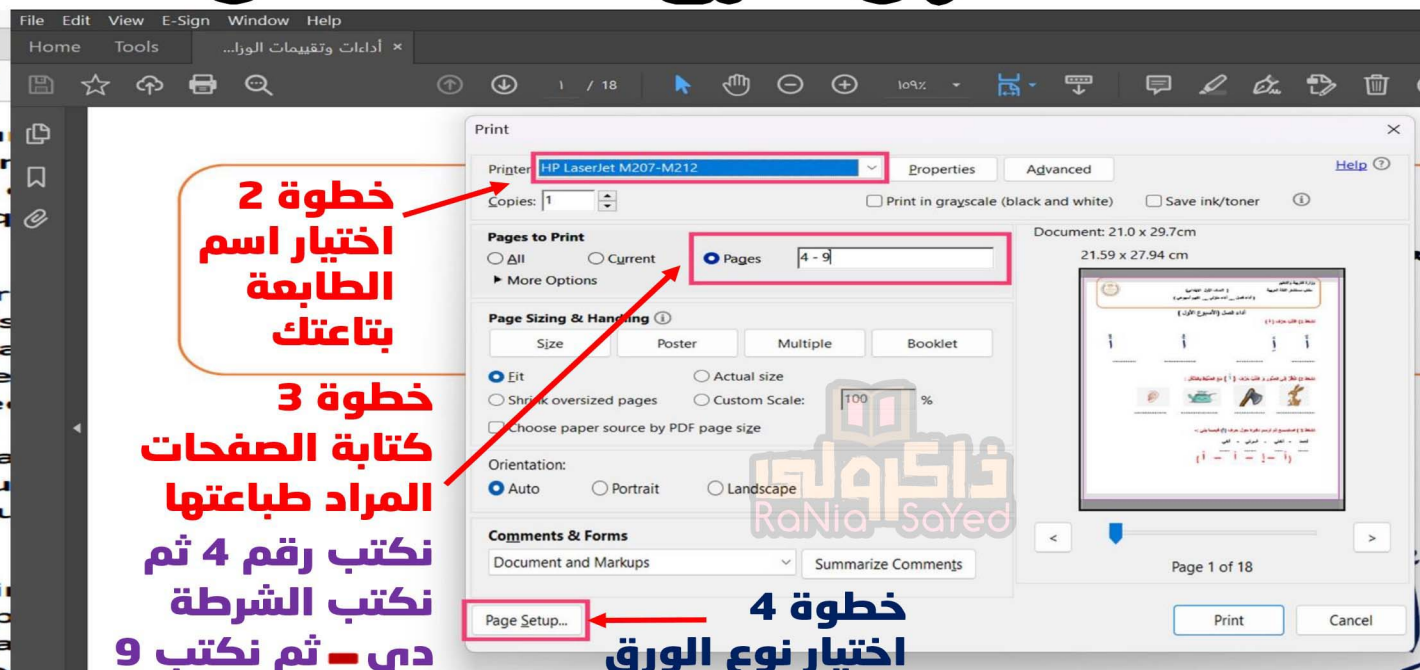
- 5 Simplify to the simplest form :

$$\sqrt{\frac{4}{25}} + \left(\frac{-3}{2}\right)^0 + \sqrt[3]{\frac{27}{125}}$$

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



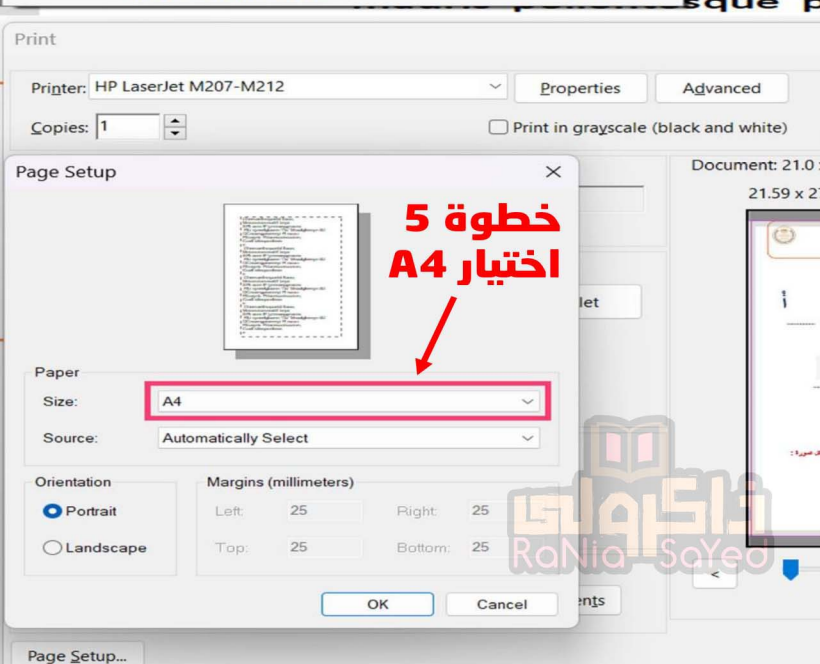
خطوة 1



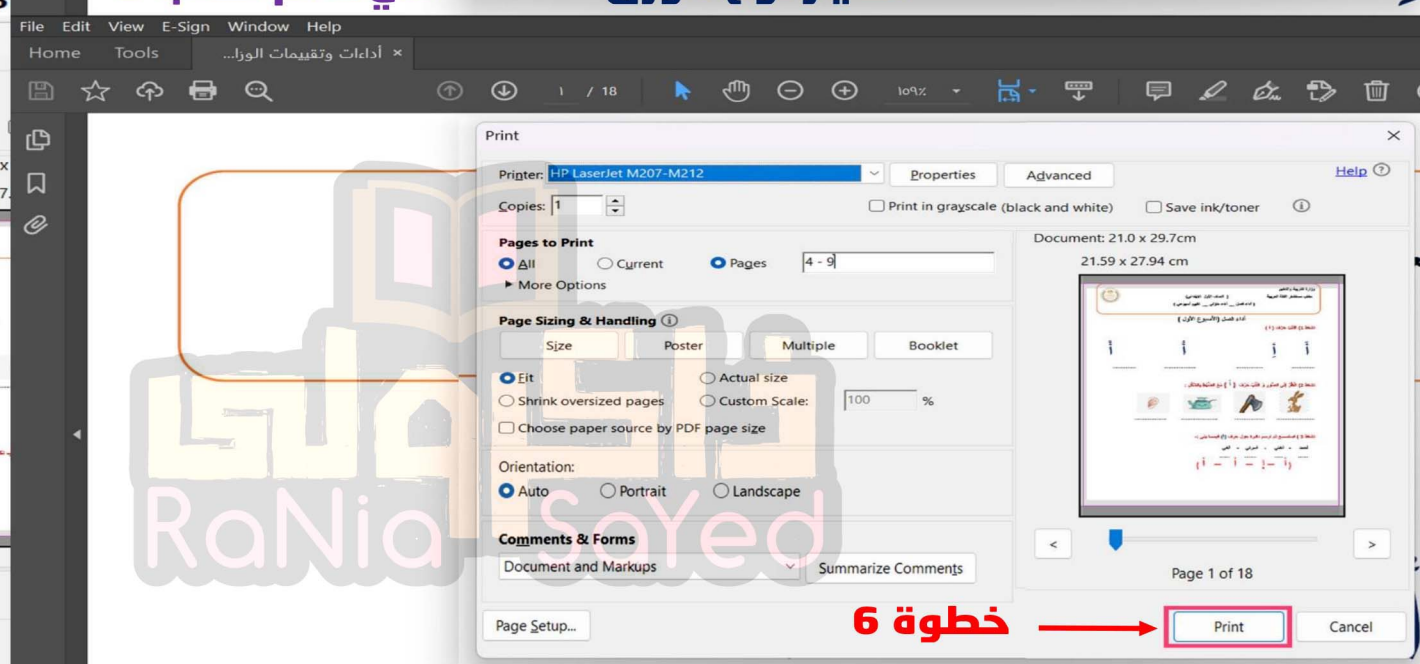
خطوة 2
اختيار اسم
الطابعة
بتاعتك

خطوة 3
كتابة الصفحات
المراد طباعتها
نكتب رقم 4 ثم
نكتب الشرطة
دي - ثم نكتب 9

خطوة 4
اختيار نوع الورق



خطوة 5
اختيار A4



خطوة 6

حمل الآن

مجاناً وحصرياً

المراجعة رقم (2)

اختبار شهر مارس



1- Choose the correct answer:

2

a Double of the number 2^4 is

(2^8 , 2^6 , 2^5 , 2^{16})

b $-4^3 =$

(64 , - 64 , - 16 , - 32)

2- Answer each of the following:

8

a Find in simplest form the result of:

(1) $(x-2y)^2$:

.....

(2) $(a-5)(a+5)$:

.....

b Simplify $\sqrt{\frac{9}{4}} + \sqrt[3]{\frac{-27}{8}} + (\frac{9}{4})^0$

.....

.....

.....

.....

c Write the result of: $(3.8 \times 10^8) \div (1.9 \times 10^{-6})$ in scientific notation.

.....

.....

.....

.....

.....

d If the expression $(x^3 - x^2 - 4x - m)$ is divisible by $x - 3$. find the value of m

.....

.....

.....

.....

.....

1- Choose the correct answer:

2

- a $\sqrt{4 + \dots} = 5$ (1 , 6 , 21 , 12)
- b If the volume of a cube is 64 cm^3 , then its edge length = cm (4 , 6 , 8 , 16)

2- Answer each of the following:

8

- a Simplify to the simplest form $2x(3x - 1) + 3x(x + 2)$, then find the numerical value when $x = 1$

.....

.....

.....

.....

.....

- b Find the solution set of $3(2x - 1) > 9$ in $\mathbb{N}$

.....

.....

.....

.....

.....

- c Find in simplest form the value of: $\frac{(a)^{-3} \times (-a)^4}{(-a)^2 \times (a)^3}$

.....

.....

.....

.....

.....

- d Find the area of a rhombus with diagonal lengths of 16 inches and 30 inches.

.....

.....

.....

.....

.....

1- Choose the correct answer:

2

a $2(x + 3) = \dots\dots\dots$ ($2x^2 + 6x$, $2x + 3$, $2x + 6$, $x + 6$)

b If $x - 3 > 4$, which of the following could be the value of x ? $\dots\dots\dots$ (-4 , 0 , 5 , 8)

2- Answer each of the following:

8

- a Which is greater in area: A square with diagonal length of 12 cm or a rhombus with diagonal lengths of 11 cm and 13 cm?.

.....

.....

.....

.....

- b Find the solution set in $\mathbb{Z}$ for the inequality: $2(x + 5) - 7 > 9$

.....

.....

.....

.....

- c Simplify the expression in the simplest form:

$(2n-1)^2 - (2n+1)(2n-1)$, then find the numerical value when $n = -3$

.....

.....

.....

.....

- d Arrange the following in an ascending order

16×10^{-6} , 1.5×10^{-5} , 0.8×10^{-5} , 14×10^{-4}

.....

.....

.....

.....

1- Choose the correct answer:

- a Double of the number 2^4 is $(2^8, 2^6, 2^5, 2^{16})$
- b $-4^3 =$ $(64, -64, -16, -32)$

2- Answer each of the following:

- a Find in simplest form the result of:

(1) $(x-2y)^2$:

$$(x-2y)^2 = x^2 - 4xy + 4y^2$$

(2) $(a-5)(a+5)$:

$$(a-5)(a+5) = a^2 - 25$$

- b Simplify $\sqrt{\frac{9}{4}} + \sqrt[3]{\frac{-27}{8}} + \left(\frac{9}{4}\right)^0$

$$\begin{aligned} & \sqrt{\frac{9}{4}} + \sqrt[3]{\frac{-27}{8}} + \left(\frac{9}{4}\right)^0 \\ &= \frac{3}{2} + \frac{-3}{2} + 1 \\ &= 0 + 1 = 1 \end{aligned}$$

- c Write the result of: $(3.8 \times 10^8) \div (1.9 \times 10^{-6})$ in scientific notation.

$$\begin{aligned} & (3.8 \times 10^8) \div (1.9 \times 10^{-6}) \\ &= (3.8 \div 1.9) \times (10^8 \div 10^{-6}) \\ &= 2 \times 10^{14} \end{aligned}$$

- d If the expression $(x^3 - x^2 - 4x - m)$ is divisible by $x - 3$. find the value of m

$$\begin{array}{r} x^2 + 2x + 2 \\ x-3 \overline{) x^3 - x^2 - 4x - m} \\ \underline{-(x^3 - 3x^2)} \\ 2x^2 - 4x - m \\ \underline{-(2x^2 - 6x)} \\ 2x - m \\ \underline{-(2x - 6)} \\ 0 \end{array}$$

Then, $m = 6$

1- Choose the correct answer:

- a $\sqrt{4 + \dots} = 5$ (1, 6, **21**, 12)
- b If the volume of a cube is 64 cm^3 , then its edge length = cm (**4**, 6, 8, 16)

2- Answer each of the following:

- a Simplify to the simplest form $2x(3x - 1) + 3x(x + 2)$, then find the numerical value when $x = 1$

$$\begin{aligned} & 2x(3x - 1) + 3x(x + 2) \\ &= 6x^2 - 2x + 3x^2 + 6x = 9x^2 + 4x \\ &\text{The numerical value when } x = 1 \text{ is} \\ &9 \times 1^2 + 4 \times 1 = 9 + 4 = 13 \end{aligned}$$

- b Find the solution set of $3(2x - 1) > 9$ in $\mathbb{N}$

$$\begin{aligned} & 3(2x - 1) > 9 \\ & 6x - 3 > 9 \\ & 6x > 12 \\ & x > 2 \end{aligned}$$

The Solution set in $\mathbb{N} = \{3, 4, 5, 6, \dots\}$

- c Find in simplest form the value of: $\frac{(a)^{-3} \times (-a)^4}{(-a)^2 \times (a)^3}$

$$\begin{aligned} \frac{(a)^{-3} \times (-a)^4}{(-a)^2 \times (a)^3} &= \frac{(a)^{-3} \times (a)^4}{(a)^2 \times (a)^3} \\ &= \frac{(a)^{-3+4}}{(a)^{2+3}} = (a)^{-4} \end{aligned}$$

- d Find the area of a rhombus with diagonal lengths of 16 inches and 30 inches.

$$\begin{aligned} \text{Area of rhombus} &= \frac{1}{2} \times \text{the product of the lengths of its diagonals.} \\ &= \frac{1}{2} \times 16 \times 30 = 240 \text{ square inches.} \end{aligned}$$

1- Choose the correct answer:

- a $2(x + 3) = \dots\dots\dots$ ($2x^2 + 6x$, $2x + 3$, $2x + 6$, $x + 6$)
- b If $x - 3 > 4$, which of the following could be the value of x ? $\dots\dots\dots$ (-4 , 0 , 5 , 8)

2- Answer each of the following:

- a Which is greater in area: A square with diagonal length of 12 cm or a rhombus with diagonal lengths of 11 cm and 13 cm?.

$$\begin{aligned}\text{Area of square} &= \frac{1}{2} \times \text{square of the lengths of its diagonal} \\ &= \frac{1}{2} \times 12 \times 12 = 72 \text{ cm}^2\end{aligned}$$

$$\begin{aligned}\text{Area of rhombus} &= \frac{1}{2} \times \text{the product of the lengths of its diagonals} \\ &= \frac{1}{2} \times 11 \times 13 = 71.5 \text{ cm}^2\end{aligned}$$

The area of a square is greater

- b Find the solution set in $\mathbb{Z}$ for the inequality: $2(x + 5) - 7 > 9$

$$2(x + 5) - 7 > 9$$

$$2x + 10 - 7 > 9$$

$$2x + 3 > 9$$

$$2x > 6$$

$$x > 3$$

The Solution set is $\{4, 5, 6, \dots\}$

- c Simplify the expression in the simplest form:

$$(2n-1)^2 - (2n+1)(2n-1), \text{ then find the numerical value when } n = -3$$

$$(2n-1)^2 - (2n+1)(2n-1)$$

$$4n^2 - 4n + 1 - 4n^2 + 1 = -4n + 2$$

The numerical value when $n = -3$ is

$$-4n + 2 = -4 \times -3 + 2 = 12 + 2 = 14$$

- d Arrange the following in an ascending order

$$16 \times 10^{-6} , 1.5 \times 10^{-5} , 0.8 \times 10^{-5} , 14 \times 10^{-4}$$

Numbers in scientific notation are

$$1.6 \times 10^{-5} , 1.5 \times 10^{-5} , 8 \times 10^{-6} , 1.4 \times 10^{-3}$$

$$\text{The order: } 0.8 \times 10^{-5} , 1.5 \times 10^{-5} , 16 \times 10^{-6} , 14 \times 10^{-4}$$

حمل الآن

مجاناً وحصرياً

المراجعة رقم (3)

اختبار شهر مارس



Q1: Choose the correct answer

1 $(-\frac{3}{5})^{-3} = \dots\dots\dots$

☐ a $-\frac{27}{125}$

☐ b $-\frac{125}{27}$

☐ c $\frac{27}{125}$

☐ d $\frac{125}{27}$

2 $(2x)^4 = \dots\dots\dots$

☐ a $2x^4$

☐ b $16x$

☐ c $16x^4$

☐ d $16x^2$

3 Fifth of $5^{25} = \dots\dots\dots$

☐ a 5^{-5}

☐ b 5^{15}

☐ c 5^{24}

☐ d 1^{25}

4 If: $2^4 \times a = 2^{20}$, what is the value of a?

☐ a 2^{16}

☐ b 2^{24}

☐ c 2^5

☐ d 2

5 The greatest value of $(\frac{1}{8})^m$, when m =

☐ a -1

☐ b zero

☐ c 1

☐ d 100

6 $\frac{3^x}{3^{-y}} = \dots\dots\dots$

☐ a $-\frac{x}{y}$

☐ b $3^{x \div y}$

☐ c 3^{x+y}

☐ d 3^{x-y}

7 $4^{-1} + 4^{-1} + 4^{-1} + 4^{-1} = \dots\dots\dots$

☐ a 4^{-4}

☐ b 4^4

☐ c 1

☐ d 16

8 Which of the following numbers is written in scientific notation?

☐ a 14.41×10^{-5}

☐ b 0.4×10^2

☐ c 35.4×10^8

☐ d 1.1×10^{-3}

9 The additive inverse of the number $(-5)^0$ is

☐ a 1

☐ b 5

☐ c -5

☐ d $-(7)^0$



10 If $xy^{-1} = \frac{1}{3}$, then $\frac{y}{x} = \dots\dots\dots$

(a) $\frac{1}{3}$

(b) 1

(c) $-\frac{1}{3}$

(d) 3

11 $\sqrt{25 + 144} = 5 + \dots\dots\dots$

(a) 12

(b) 13

(c) 8

(d) 6

12 If $0.00043 = 4.3 \times 10^n$, Then $n = \dots\dots\dots$

(a) -5

(b) -4

(c) 4

(d) 5

13 If $a = b$, then $(\frac{x}{3y})^{b-a} = \dots\dots\dots$

(a) $\frac{x}{3y}$

(b) $\frac{3y}{x}$

(c) 1

(d) zero

14 The multiplicative inverse of the number $(-1)^{45}$ is $\dots\dots\dots$

(a) $(-1)^{43}$

(b) $(-1)^{44}$

(c) $(1)^{43}$

(d) $(1)^{44}$

15 $(\frac{2}{3})^{-2} = \dots\dots\dots$

(a) $-\frac{9}{4}$

(b) $-\frac{4}{9}$

(c) $\frac{4}{9}$

(d) $\frac{9}{4}$

16 $\sqrt[3]{x^{15}} = \sqrt{\dots\dots\dots}$

(a) x^{15}

(b) x^{45}

(c) x^5

(d) x^{10}

17 The solution set of the equation: $x^2 - 1 = 0$ in Q is $\dots\dots\dots$

(a) {0}

(b) {1}

(c) {-1}

(d) {1, -1}

18 Which of the following is the greatest ?

(a) 6.3×10^5

(b) 9.8×10^4

(c) 5.2×10^5

(d) 7.3×10^4

19 $0.0000073 = 7.3 \times \dots\dots\dots$

(a) 10^{-6}

(b) 10^{-5}

(c) 10^5

(d) 10^6



20 $4^{10} + 4^{10} + 4^{10} + 4^{10} = \dots\dots\dots$

(a) 4^{10}

(b) 4^{40}

(c) 2^9

(d) 4^{11}

21 The multiplicative inverse of the number 3^{-2} is $\dots\dots\dots$

(a) -3^{-2}

(b) 3^2

(c) 2^3

(d) -2^3

22 $(-1)^{104} + (-1)^{103} = \dots\dots\dots$

(a) 0

(b) -1

(c) 1

(d) 0

23 If the volume of a cube is 64 cm^3 : then its edge length is $\dots\dots\dots$ cm.

(a) 4

(b) 8

(c) 16

(d) 64

24 The S.S of the equation: $x^2 + 9 = 0$ in Q is $\dots\dots\dots$

(a) $\{-9\}$

(b) $\{-3, 3\}$

(c) $\{-3\}$

(d) $\emptyset$

25 If $3^x = 7$, then $3^{x+1} = \dots\dots\dots$

(a) 49

(b) 9

(c) 21

(d) 8

26 The scientific notation of the number 750×10^{-6} is $\dots\dots\dots$

(a) 7.5×10^{-8}

(b) 7.5×10^{-7}

(c) 7.5×10^{-4}

(d) 7.5×10^4

27 If double the number 2^{50} equals 2^x , then $x = \dots\dots\dots$

(a) 25

(b) 49

(c) 100

(d) 51

28 If $0.0000503 = m \times 10^{-5}$, Then $m = \dots\dots\dots$

(a) 503

(b) 5.03

(c) 50.3

(d) 0.503

29 $\sqrt[3]{-64} + \sqrt{16} = \dots\dots\dots$

(a) zero

(b) -8

(c) 8

(d) ± 8



30 The area of a square whose side length is $\sqrt{3}$ cm is cm²

- (a) $4 \times \sqrt{3}$ (b) 9 (c) 3 (d) 6

31 $(\frac{a}{b})^5 \times \frac{b^5}{a^5} = \dots\dots\dots$ (where $a \neq \text{zero}$, $b \neq \text{zero}$)

- (a) $(\frac{a}{b})^{10}$ (b) $\frac{a}{b}$ (c) ab (d) $(xy)^{\text{zero}}$

32 The square whose area is 10 cm², its side length is cm

- (a) 100 (b) $\sqrt{10}$ (c) 10 (d) $\sqrt{100}$

Q2: Answer The Following

1 Find the S.S of the following in Q:

(a) $x^3 + 26 = -1$

(b) $2x^2 + 1 = 33$

(c) $(x - 1)^3 + 2 = -6$

(d) $3x^2 + 75 = 0$

(e) $2(x^2 - 3) = x^2 + 3$

(f) $(x - 1)^3 = 216$

2 Write the result of the following in scientific notation:

$(4.5 \times 10^7) \times (4 \times 10^8)$



Follow for More!

3 Simplify the following to the simplest form: $(-\frac{1}{2})^2 \times \sqrt{\frac{81}{25}} \times \frac{4}{3}$

4 Simplify to the simplest form: $\frac{5^7 \times 5^{-4}}{5^3}$

5 If $x = \frac{2}{3}$, and $y = -\frac{1}{2}$, Find the value of: x^2y^2 and $(a - b)^{-1}$

6 By using prime factors and exponents write each of the following:

a $180 = \dots\dots\dots$

b $324 = \dots\dots\dots$

7 If a and b are the two square roots of c where $c \neq 0$, complete the following :

a $a + b = \dots\dots\dots$

b $\frac{a}{b} = \dots\dots\dots$

8 Put in the scientific notation : 0.000014×10^2

9 Calculate the value of the following in the scientific notation:
 $(3.6 \times 10^8) \times (1.8 \times 10^3)$

10 The sum of the two square roots of the number 16 is

11 Simplify the following to the simplest form: $1\frac{1}{3} \times \sqrt{\frac{81}{16}} \times (-\frac{1}{2})^0$

12 $2^2 + 2^2 = 2^{\dots\dots\dots}$



13 Simplify to the simplest form: $\frac{a^7 \times a^8 \times a^2}{a^3 \times a^9 \times a^5}$

14 Calculate the value of the following in scientific notation:
 $(5.4 \times 10^4) + (3.7 \times 10^5)$

15 The total area of a cube is 294 square centimeters.
 Find the length of its edge.

16 Simplify: $\frac{x^3 \times x^{-2}}{x^{-5} \times x}$, Then find the numerical value of the result when: $x = -2$

17 Find in the simplest form:

a $\left(\frac{3^4 \times 7^3}{7^4 \times 3^3}\right)^{-1}$

b $(7^0 \times 2^{-2})^{-3}$

c $\frac{8 \times 8^{-3}}{8^{-4}}$

18 A square whose area is 0.81 cm^2 , Find its perimeter.

19 Find the Solution set of $4x^3 = -32$ in $\mathbb{Z}$



Q1: Choose the correct answer

1 The inequality which represent the maximum speed of a car is 80 km/hr is

- (a) $x > 80$ (b) $x < 80$ (c) $x \geq 80$ (d) $x \leq 80$

2 If $x > 7$, then $-x$

- (a) > -7 (b) ≥ -7 (c) < -7 (d) ≤ -7

3 If $\frac{x}{y} = 70$, then $\frac{x}{2y} = \dots\dots\dots$

- (a) 35 (b) 68 (c) 72 (d) 140

4 If $x - y = 4$, and $x + y = 7$, then $x^2 - y^2 = \dots\dots\dots$

- (a) 4 (b) 7 (c) 3 (d) 28

5 The solution set of the inequality: $-4x > 3$ in Z^+ is

- (a) $\{0, -1, -2, \dots\}$ (b) $\{0, 1, 2, 3, 4, \dots\}$ (c) $\{0\}$ (d) $\emptyset$

6 If $x^2 = 16$, $y^2 = 9$ and $xy = 12$, then $(x - y)^2 = \dots\dots\dots$

- (a) 49 (b) 165 (c) -1 (d) 1

7 If $x^2 = 10$, $y^2 = 7$, then $(x + y)(x - y) = \dots\dots\dots$

- (a) 70 (b) 17 (c) 3 (d) -3

8 One of the solutions of the inequality: $3 - x < 1$ in Z is

- (a) 0 (b) 1 (c) 2 (d) 3

9 $6y(3y^2 - 4y + 2) = \dots\dots\dots$

- (a) $18y^3 + 24y^3 + 12y$ (b) $18y^3 - 4y + 2$
(c) $18y^2 - 24y + 2$ (d) $18y^3 - 24y^2 + 12y$



10 If $3y$ is the side length of a square, then its area equals

- (a) $12y$ (b) $9y$ (c) $9y^2$ (d) $81y^2$

11 The coefficient of xy in $(2x + 3y)^2$ is

- (a) 1 (b) 5 (c) 6 (d) 12

12 If $(4x - 5)^2 = ax^2 + bx + c$, what is the value of a ?

- (a) 20 (b) -20 (c) 16 (d) -10

13 $k(3m + 2) = 36m^2 + 24m$, then $k =$

- (a) $12m$ (b) 12 (c) $18m$ (d) $6m$

14 If $(x - y)(2x + y) = 2x^2 + kxy - y^2$, then $k =$

- (a) 3 (b) 4 (c) -1 (d) 1

15 A rectangle whose length is $3x^2$ cm, and its width is $5x$ cm, then its area is cm^2 .

- (a) $15x$ (b) $15x^2$ (c) $8x^3$ (d) $15x^3$

16 A rectangle with an area is $(x^2 - 9x + 18) \text{ cm}^2$. And its length is $(x - 3) \text{ cm}$, then its width = cm.

- (a) $x - 10$ (b) $x - 6$ (c) $x + 6$ (d) $x + 10$

17 $\div (-2x^2y) = 12xy^2$

- (a) $6xy$ (b) $-6xy$ (c) $24x^3y^3$ (d) $-24x^3y^3$

18 If the volume of a cuboid is $(x^2 + 14x + 49) \text{ cm}^3$, and its base area is $(x + 7) \text{ cm}$, then the height = cm.

- (a) $x + 6$ (b) $x + 5$ (c) $x + 7$ (d) $x + 9$

19 If $(x - 3)$ is one factor of $(x^2 + 4x - 21)$, then the other factor is

- (a) $x + 7$ (b) $x - 5$ (c) $x + 5$ (d) $x + 3$



20 The perimeter of the rectangle whose dimensions are $8x$, $5x$ is

- (a) $40x^2$ (b) $13x$ (c) $40x$ (d) $26x$

21 If the quotient of $(x^2 - 2x - 35)$ divided by $(x + 5)$ is $(x + b)$, what is the value of b ?

- (a) -7 (b) 5 (c) -5 (d) 7

22 If $(x + 3)(x - 3) = x^2 + k$, then $k =$

- (a) 6 (b) 9 (c) -6 (d) -9

23 If $-x > 4$, then

- (a) $x > 4$ (b) $x < 4$ (c) $x < -4$ (d) $x > -4$

24 If $(2x + 3)(x - 5) = 2x^2 + bx - 15$, then $b =$

- (a) $-7x$ (b) -7 (c) $7x$ (d) 7

25 If $x < 0 < y$, $|x| > y$, Then $x + y$ zero

- (a) $>$ (b) $<$ (c) $=$ (d) $\geq$

26 The solution set of the equation: $(x - 3)(x + 3) = 0$ in Q is

- (a) $\{3\}$ (b) $\{-3\}$ (c) $\emptyset$ (d) $\{-3, 3\}$

27 If $\frac{x}{-3} < 2$, then x -6

- (a) $>$ (b) $<$ (c) $=$ (d) $\geq$

28 If $(x + 5)(x - 5) = x^2 + b$, then $b =$

- (a) 25 (b) -25 (c) 10 (d) -10

29 The volume of a cuboid whose dimensions are $5x$ cm , $2x$ cm, and $2x$ cm, is cm^3 .

- (a) $9x$ (b) $20x^2$
(c) $9x^3$ (d) $20x^3$



30 $\div 5m = 25 m^2n$

- (a) $125 m^2n$ (b) $125 m^3n$ (c) m^3n (d) $25 m^3n$

31 $\frac{a+b}{c} = \dots\dots\dots$

- (a) $\frac{a+b}{c}$ (b) $\frac{a}{b+c}$ (c) $\frac{a}{c} + \frac{b}{c}$ (d) $\frac{ab}{c}$

32 $(x^3 + x^2) \div x^2 = \dots\dots\dots$

- (a) 0 (b) x (c) $x + 1$ (d) $2x + 1$

33 If the area of rectangle is $24x^3$ and its with is $4x$ then its length is

- (a) $6x$ (b) $8x^2$ (c) $6x^2$ (d) $96x^4$

34 If $(6x^2y^3 + kxy) \div 6x = xy^3 - 12y$ where $(x \neq 0)$, then $|k| = \dots\dots\dots$

- (a) -72 (b) -2 (c) 2 (d) 72

35 What is the value of m that's make $x^2 + 5x - m$ divisible by $x - 2$?

- (a) 12 (b) 16 (c) 14 (d) 15

36 If $(5x+2)^2 = ax^2 + bx + c$, what is the value of b ?

- (a) 7 (b) 10 (c) 20 (d) 14

37 The quotient of $x^2 + 3x - 40$ by $x + 8$ equals

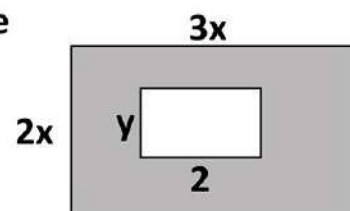
- (a) $x + 13$ (b) $x + 5$ (c) $x - 5$ (d) $x - 13$



Q2: Answer The Following

- 1 Simplify in the simplest form: $(2m + 3)^2 + (2m - 3)(2m + 3)$
Then find the numerical value of the expression when $m = 2$

- 2 Find in the simplest form the expression which represents the shaded part of the opposite figure:



- 3 Find the solution set of the following inequalities in Z:

a $5 - 3x \geq 14$

b $3(x - 7) \geq 7(x - 3)$

c $3(2x - 1) > 9$

d $x - 3(x - 5) \geq x + 7$

- 4 Calculate the area of a rectangle whose length is 5 units greater than its width, and whose width is equal to x units of length.



5 Find in the simplest form each of the following:

a $-5m(m+2)$

b $(x+5)(x-5)$

c $(x+3)^2 + (6-x)$

d $(7-5x)(5x+7)$

e $x(x^2-x-1) + 3(2x^2+x+1)$

f $-3m^2(-2m+3n-1)$

g $(a+b)^2 - (a+b)(a-b)$

h $(2x-1)(x^2-3x+4)$

6 Simplify to the simplest form the expression: $2x(2x+1) + 3x(x+2)$, then find the numerical value of the expression when $x = -1$

7 Find $\frac{36x^4y - 15xy^2}{18xy}$ in the simplest form

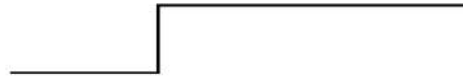
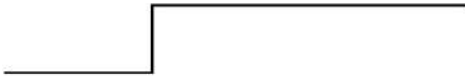
8 If $(2x+1)$ is a factor of the expression $(2x^2-7x-4)$, then find the other factor ?



9 Find the quotient of the following:

a $3x^2 + 10x - 8$ by $x + 4$

b $x^3 - 27$ by $x - 3$



10 Reduce: $(x - 3)^2 - (x - 3)(x + 3)$

11 Find the value of b that makes the expression $(4x^2 + 11x + b)$ divisible by $(4x - 1)$

12 $(x + 7)(x - 7) = x^2 + \dots\dots\dots$

13 If the area of a rectangle is $(4x^4 + 8x^3 + 12x^2)$ square units, and the length of one of its dimensions is $(4x^2)$ units of length, find the length of the other dimension in terms of x .

14 Find the solution set of the following inequality in $\mathbb{N}$:

$$2x - 3 < 1$$



Follow for More!

Q1: Choose the correct answer

- 1 The area of the rhombus whose diagonal lengths are 6 cm, and 8cm, equals cm^2

(a) 3 (b) 24 (c) 16 (d) 12
- 2 The area of the square = $\frac{1}{2}$ of the product of the lengths of its

(a) sides (b) diagonals (c) heights (d) medians
- 3 A rhombus is of area 60 cm^2 and the length of one of its diagonals equals 10 cm. then the length of the other diagonal equals cm.

(a) 4 (b) 8 (c) 10 (d) 12
- 4 A rhombus has a side length of 10 cm, and the lengths of its two diagonals are 12 cm and 16 cm. Its height = cm.

(a) 96 (b) 10 (c) 9.6 (d) 6.9
- 5 A square whose side length is S and its area is A, then its area if its side is 2S is

(a) A (b) 2A (c) 4A (d) A^2
- 6 The area of the square whose diagonal length is 6 cm. equals cm^2 .

(a) 12 (b) 18 (c) 24 (d) 36
- 7 The area of trapezium whose middle base is 7 cm, and its height is 6 cm equals cm^2 .

(a) 21 (b) 40 (c) 42 (d) 13
- 8 The lengths of the bases of trapezium is 6 cm and 10 cm, then the length of its middle base is cm.

(a) 16 (b) 9 (c) 15 (d) 8



Q2: Answer The Following

- 1 A trapezium with a middle base of 19 cm and a height of 5 cm.
What is its area?

- 2 Determine the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 5 meters and 20 meters.

- 3 A trapezium has an area of 315 square centimeters, a height of 15 cm, and the ratio between the lengths of its bases is 3 : 4
What is the length of each base?

- 4 A trapezium with an area of 150 square meters has bases measuring 10 meters and 20 meters. Calculate its height

- 5 Find the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 4 meters and 25 meters.



Q1: Choose the correct answer

1 $(-\frac{3}{5})^{-3} = \dots\dots\dots$

☐ a $-\frac{27}{125}$

☒ b $-\frac{125}{27}$

☐ c $\frac{27}{125}$

☐ d $\frac{125}{27}$

2 $(2x)^4 = \dots\dots\dots$

☐ a $2x^4$

☐ b $16x$

☒ c $16x^4$

☐ d $16x^2$

3 Fifth of $5^{25} = \dots\dots\dots$

☐ a 5^{-5}

☐ b 5^{15}

☒ c 5^{24}

☐ d 1^{25}

4 If: $2^4 \times a = 2^{20}$, what is the value of a?

☒ a 2^{16}

☐ b 2^{24}

☐ c 2^5

☐ d 2

5 The greatest value of $(\frac{1}{8})^m$, when m =

☒ a -1

☐ b zero

☐ c 1

☐ d 100

6 $\frac{3^x}{3^{-y}} = \dots\dots\dots$

☐ a $-\frac{x}{y}$

☐ b $3^{x \div y}$

☒ c 3^{x+y}

☐ d 3^{x-y}

7 $4^{-1} + 4^{-1} + 4^{-1} + 4^{-1} = \dots\dots\dots$

☐ a 4^{-4}

☐ b 4^4

☒ c 1

☐ d 16

8 Which of the following numbers is written in scientific notation?

☐ a 14.41×10^{-5}

☐ b 0.4×10^2

☐ c 35.4×10^8

☒ d 1.1×10^{-3}

9 The additive inverse of the number $(-5)^0$ is

☐ a 1

☐ b 5

☐ c -5

☒ d $-(7)^0$



10 If $xy^{-1} = \frac{1}{3}$, then $\frac{y}{x} = \dots\dots\dots$

(a) $\frac{1}{3}$

(b) 1

(c) $-\frac{1}{3}$

(d) 3

11 $\sqrt{25 + 144} = 5 + \dots\dots\dots$

(a) 12

(b) 13

(c) 8

(d) 6

12 If $0.00043 = 4.3 \times 10^n$, Then $n = \dots\dots\dots$

(a) -5

(b) -4

(c) 4

(d) 5

13 If $a = b$, then $(\frac{x}{3y})^{b-a} = \dots\dots\dots$

(a) $\frac{x}{3y}$

(b) $\frac{3y}{x}$

(c) 1

(d) zero

14 The multiplicative inverse of the number $(-1)^{45}$ is $\dots\dots\dots$

(a) $(-1)^{43}$

(b) $(-1)^{44}$

(c) $(1)^{43}$

(d) $(1)^{44}$

15 $(\frac{2}{3})^{-2} = \dots\dots\dots$

(a) $-\frac{9}{4}$

(b) $-\frac{4}{9}$

(c) $\frac{4}{9}$

(d) $\frac{9}{4}$

16 $\sqrt[3]{x^{15}} = \sqrt{\dots\dots\dots}$

(a) x^{15}

(b) x^{45}

(c) x^5

(d) x^{10}

17 The solution set of the equation: $x^2 - 1 = 0$ in Q is $\dots\dots\dots$

(a) $\{0\}$

(b) $\{1\}$

(c) $\{-1\}$

(d) $\{1, -1\}$

18 Which of the following is the greatest ?

(a) 6.3×10^5

(b) 9.8×10^4

(c) 5.2×10^5

(d) 7.3×10^4

19 $0.0000073 = 7.3 \times \dots\dots\dots$

(a) 10^{-6}

(b) 10^{-5}

(c) 10^5

(d) 10^6



20 $4^{10} + 4^{10} + 4^{10} + 4^{10} = \dots\dots\dots$

(a) 4^{10}

(b) 4^{40}

(c) 2^9

(d) 4^{11}

21 The multiplicative inverse of the number 3^{-2} is $\dots\dots\dots$

(a) -3^{-2}

(b) 3^2

(c) 2^3

(d) -2^3

22 $(-1)^{104} + (-1)^{103} = \dots\dots\dots$

(a) 0

(b) -1

(c) 1

(d) 0

23 If the volume of a cube is 64 cm^3 : then its edge length is $\dots\dots\dots$ cm.

(a) 4

(b) 8

(c) 16

(d) 64

24 The S.S of the equation: $x^2 + 9 = 0$ in Q is $\dots\dots\dots$

(a) $\{-9\}$

(b) $\{-3, 3\}$

(c) $\{-3\}$

(d) $\emptyset$

25 If $3^x = 7$, then $3^{x+1} = \dots\dots\dots$

(a) 49

(b) 9

(c) 21

(d) 8

26 The scientific notation of the number 750×10^{-6} is $\dots\dots\dots$

(a) 7.5×10^{-8}

(b) 7.5×10^{-7}

(c) 7.5×10^{-4}

(d) 7.5×10^4

27 If double the number 2^{50} equals 2^x , then $x = \dots\dots\dots$

(a) 25

(b) 49

(c) 100

(d) 51

28 If $0.0000503 = m \times 10^{-5}$, Then $m = \dots\dots\dots$

(a) 503

(b) 5.03

(c) 50.3

(d) 0.503

29 $\sqrt[3]{-64} + \sqrt{16} = \dots\dots\dots$

(a) zero

(b) -8

(c) 8

(d) ± 8



30 The area of a square whose side length is $\sqrt{3}$ cm is cm²

(a) $4 \times \sqrt{3}$

(b) 9

(c) 3

(d) 6

31 $(\frac{a}{b})^5 \times \frac{b^5}{a^5} = \dots\dots\dots$ (where $a \neq \text{zero}$, $b \neq \text{zero}$)

(a) $(\frac{a}{b})^{10}$

(b) $\frac{a}{b}$

(c) ab

(d) $(xy)^{\text{zero}}$

32 The square whose area is 10 cm², its side length is cm

(a) 100

(b) $\sqrt{10}$

(c) 10

(d) $\sqrt{100}$

Q2: Answer The Following

1 Find the S.S of the following in Q:

(a) $x^3 + 26 = -1$

$\{-3\}$

(b) $2x^2 + 1 = 33$

$\{-4, 4\}$

(c) $(x - 1)^3 + 2 = -6$

$\{-1\}$

(d) $3x^2 + 75 = 0$

$\emptyset$

(e) $2(x^2 - 3) = x^2 + 3$

$\{-3, 3\}$

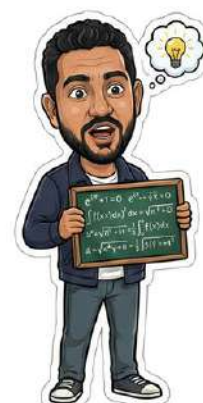
(f) $(x - 1)^3 = 216$

$\{7\}$

2 Write the result of the following in scientific notation:

$(4.5 \times 10^7) \times (4 \times 10^8)$

1.8×10^{16}



Follow for More!

3 Simplify the following to the simplest form: $(-\frac{1}{2})^2 \times \sqrt{\frac{81}{25}} \times \frac{4}{3}$

$\frac{3}{5}$

4 Simplify to the simplest form: $\frac{5^7 \times 5^{-4}}{5^3}$

1

5 If $x = \frac{2}{3}$, and $y = -\frac{1}{2}$, Find the value of: x^2y^2 and $(a-b)^{-1}$

$\frac{6}{7}$

6 By using prime factors and exponents write each of the following:

a $180 = \dots\dots\dots 2^2 \times 3^2 \times 5$

b $324 = \dots\dots\dots 2^2 \times 3^4$

7 If a and b are the two square roots of c where $c \neq 0$, complete the following :

a $a + b = \dots\dots\dots 0$

b $\frac{a}{b} = \dots\dots\dots -1$

8 Put in the scientific notation : 0.000014×10^2

1.4×10^{-3}

9 Calculate the value of the following in the scientific notation:

$(3.6 \times 10^8) \times (1.8 \times 10^3)$

6.48×10^{11}

10 The sum of the two square roots of the number 16 is $\dots\dots\dots 0$.

11 Simplify the following to the simplest form: $1 \frac{1}{3} \times \sqrt{\frac{81}{16}} \times (-\frac{1}{2})^0$

3

12 $2^2 + 2^2 = 2^{\dots\dots\dots 3}$



13 Simplify to the simplest form: $\frac{a^7 \times a^8 \times a^2}{a^3 \times a^9 \times a^5}$

1

14 Calculate the value of the following in scientific notation:
 $(5.4 \times 10^4) + (3.7 \times 10^5)$

 4.24×10^5

15 The total area of a cube is 294 square centimeters.
 Find the length of its edge.

Length of edge = 7 cm

16 Simplify: $\frac{x^3 \times x^{-2}}{x^{-5} \times x}$, Then find the numerical value of the result when: $x = -2$

 x^5

The Value: -32

17 Find in the simplest form:

a $\left(\frac{3^4 \times 7^3}{7^4 \times 3^3}\right)^{-1}$

b $(7^0 \times 2^{-2})^{-3}$

c $\frac{8 \times 8^{-3}}{8^{-4}}$

 $\frac{7}{3}$

64

64

18 A square whose area is 0.81 cm^2 , Find its perimeter.

3.6 cm

19 Find the Solution set of $4x^3 = -32$ in $\mathbb{Z}$

S.S = {-2}



Q1: Choose the correct answer

1 The inequality which represent the maximum speed of a car is 80 km/hr is

☐ a $x > 80$

☐ b $x < 80$

☐ c $x \geq 80$

☒ d $x \leq 80$

2 If $x > 7$, then $-x$

☐ a > -7

☐ b ≥ -7

☒ c < -7

☐ d ≤ -7

3 If $\frac{x}{y} = 70$, then $\frac{x}{2y} = \dots\dots\dots$

☒ a 35

☐ b 68

☐ c 72

☐ d 140

4 If $x - y = 4$, and $x + y = 7$, then $x^2 - y^2 = \dots\dots\dots$

☐ a 4

☐ b 7

☐ c 3

☒ d 28

5 The solution set of the inequality: $-4x > 3$ in $\mathbb{Z}^+$ is

☐ a $\{0, -1, -2, \dots\}$

☐ b $\{0, 1, 2, 3, 4, \dots\}$

☐ c $\{0\}$

☒ d $\emptyset$

6 If $x^2 = 16$, $y^2 = 9$ and $xy = 12$, then $(x - y)^2 = \dots\dots\dots$

☐ a 49

☐ b 165

☐ c -1

☒ d 1

7 If $x^2 = 10$, $y^2 = 7$, then $(x + y)(x - y) = \dots\dots\dots$

☐ a 70

☐ b 17

☒ c 3

☐ d -3

8 One of the solutions of the inequality: $3 - x < 1$ in $\mathbb{Z}$ is

☐ a 0

☐ b 1

☐ c 2

☒ d 3

9 $6y(3y^2 - 4y + 2) = \dots\dots\dots$

☐ a $18y^3 + 24y^3 + 12y$

☐ b $18y^3 - 4y + 2$

☐ c $18y^2 - 24y + 2$

☒ d $18y^3 - 24y^2 + 12y$



10 If $3y$ is the side length of a square, then its area equals

- (a) $12y$ (b) $9y$ (c) $9y^2$ (d) $81y^2$

11 The coefficient of xy in $(2x + 3y)^2$ is

- (a) 1 (b) 5 (c) 6 (d) 12

12 If $(4x - 5)^2 = ax^2 + bx + c$, what is the value of a ?

- (a) 20 (b) -20 (c) 16 (d) -10

13 $k(3m + 2) = 36m^2 + 24m$, then $k =$

- (a) $12m$ (b) 12 (c) $18m$ (d) $6m$

14 If $(x - y)(2x + y) = 2x^2 + kxy - y^2$, then $k =$

- (a) 3 (b) 4 (c) -1 (d) 1

15 A rectangle whose length is $3x^2$ cm, and its width is $5x$ cm, then its area is cm^2 .

- (a) $15x$ (b) $15x^2$ (c) $8x^3$ (d) $15x^3$

16 A rectangle with an area is $(x^2 - 9x + 18) \text{ cm}^2$. And its length is $(x - 3) \text{ cm}$, then its width = cm.

- (a) $x - 10$ (b) $x - 6$ (c) $x + 6$ (d) $x + 10$

17 $\div (-2x^2y) = 12xy^2$

- (a) $6xy$ (b) $-6xy$ (c) $24x^3y^3$ (d) $-24x^3y^3$

18 If the volume of a cuboid is $(x^2 + 14x + 49) \text{ cm}^3$, and its base area is $(x + 7) \text{ cm}$, then the height = cm.

- (a) $x + 6$ (b) $x + 5$ (c) $x + 7$ (d) $x + 9$

19 If $(x - 3)$ is one factor of $(x^2 + 4x - 21)$, then the other factor is

- (a) $x + 7$ (b) $x - 5$ (c) $x + 5$ (d) $x + 3$



20 The perimeter of the rectangle whose dimensions are $8x$, $5x$ is

☐ a $40x^2$

☐ b $13x$

☐ c $40x$

☒ d $26x$

21 If the quotient of $(x^2 - 2x - 35)$ divided by $(x + 5)$ is $(x + b)$, what is the value of b ?

☒ a -7

☐ b 5

☐ c -5

☐ d 7

22 If $(x + 3)(x - 3) = x^2 + k$, then $k =$

☐ a 6

☐ b 9

☐ c -6

☒ d -9

23 If $-x > 4$, then

☐ a $x > 4$

☐ b $x < 4$

☒ c $x < -4$

☐ d $x > -4$

24 If $(2x + 3)(x - 5) = 2x^2 + bx - 15$, then $b =$

☐ a $-7x$

☒ b -7

☐ c $7x$

☐ d 7

25 If $x < 0 < y$, $|x| > y$, Then $x + y$ zero

☐ a $>$

☒ b $<$

☐ c $=$

☐ d $\geq$

26 The solution set of the equation: $(x - 3)(x + 3) = 0$ in Q is

☐ a $\{3\}$

☐ b $\{-3\}$

☐ c $\emptyset$

☒ d $\{-3, 3\}$

27 If $\frac{x}{-3} < 2$, then x -6

☒ a $>$

☐ b $<$

☐ c $=$

☐ d $\geq$

28 If $(x + 5)(x - 5) = x^2 + b$, then $b =$

☐ a 25

☒ b -25

☐ c 10

☐ d -10

29 The volume of a cuboid whose dimensions are $5x$ cm , $2x$ cm, and $2x$ cm, is cm^3 .

☐ a $9x$

☐ b $20x^2$

☐ c $9x^3$

☒ d $20x^3$



30 $\div 5m = 25 m^2n$

(a) $125 m^2n$

(b) $125 m^3n$

(c) m^3n

(d) $25 m^3n$

31 $\frac{a+b}{c} = \dots\dots\dots$

(a) $\frac{a+b}{c}$

(b) $\frac{a}{b+c}$

(c) $\frac{a}{c} + \frac{b}{c}$

(d) $\frac{ab}{c}$

32 $(x^3 + x^2) \div x^2 = \dots\dots\dots$

(a) 0

(b) x

(c) $x + 1$

(d) $2x + 1$

33 If the area of rectangle is $24x^3$ and its with is $4x$ then its length is

(a) $6x$

(b) $8x^2$

(c) $6x^2$

(d) $96x^4$

34 If $(6x^2y^3 + kxy) \div 6x = xy^3 - 12y$ where $(x \neq 0)$, then $|k| = \dots\dots\dots$

(a) -72

(b) -2

(c) 2

(d) 72

35 What is the value of m that's make $x^2 + 5x - m$ divisible by $x - 2$?

(a) 12

(b) 16

(c) 14

(d) 15

36 If $(5x+2)^2 = ax^2 + bx + c$, what is the value of b?

(a) 7

(b) 10

(c) 20

(d) 14

37 The quotient of $x^2 + 3x - 40$ by $x + 8$ equals

(a) $x + 13$

(b) $x + 5$

(c) $x - 5$

(d) $x - 13$



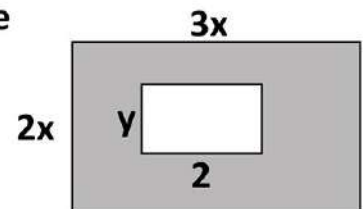
Q2: Answer The Following

- 1 Simplify in the simplest form: $(2m + 3)^2 + (2m - 3)(2m + 3)$
Then find the numerical value of the expression when $m = 2$

$8m^2 + 12m$

56

- 2 Find in the simplest form the expression which represents the shaded part of the opposite figure:



$6x^2 - 2y$

- 3 Find the solution set of the following inequalities in Z:

a $5 - 3x \geq 14$

$S.S = \{-3, -4, -5, \dots\}$

b $3(x - 7) \geq 7(x - 3)$

$S.S = \{0, -1, -2, \dots\}$

c $3(2x - 1) > 9$

$S.S = \{3, 4, 5, \dots\}$

d $x - 3(x - 5) \geq x + 7$

$S.S = \{2, 1, 0, -1, \dots\}$

- 4 Calculate the area of a rectangle whose length is 5 units greater than its width, and whose width is equal to x units of length.

$\text{Area} = \text{Length} \times \text{Width} = (x + 5) \times x = x^2 + 5x$



5 Find in the simplest form each of the following:

a $-5m(m+2)$

$-5m^2 - 10m$

b $(x+5)(x-5)$

$x^2 - 25$

c $(x+3)^2 + (6-x)$

$x^2 + 5x + 15$

d $(7-5x)(5x+7)$

$49 - 25x^2$

e $x(x^2 - x - 1) + 3(2x^2 + x + 1)$

$x^3 + 5x^2 + 2x + 3$

f $-3m^2(-2m + 3n - 1)$

$6m^3 - 9m^2n + 3m^2$

g $(a+b)^2 - (a+b)(a-b)$

$2ab + 2b^2$

h $(2x-1)(x^2 - 3x + 4)$

$2x^3 - 7x^2 + 11x - 4$

6 Simplify to the simplest form the expression: $2x(2x+1) + 3x(x+2)$, then find the numerical value of the expression when $x = -1$

$7x^2 + 8x$

-1

7 Find $\frac{36x^4y - 15xy^2}{18xy}$ in the simplest form

$2x^3 - \frac{5}{6}y$

8 If $(2x+1)$ is a factor of the expression $(2x^2 - 7x - 4)$, then find the other factor?

$(x-4)$



9 Find the quotient of the following:

a) $3x^2 + 10x - 8$ by $x + 4$

$3x - 2$

b) $x^3 - 27$ by $x - 3$

$x^2 + 3x + 9$

10 Reduce: $(x - 3)^2 - (x - 3)(x + 3)$ $-6x + 18$

11 Find the value of b that makes the expression $(4x^2 + 11x + b)$ divisible by $(4x - 1)$

$b = -3$

12 $(x + 7)(x - 7) = x^2 + \dots -49.$

13 If the area of a rectangle is $(4x^4 + 8x^3 + 12x^2)$ square units, and the length of one of its dimensions is $(4x^2)$ units of length, find the length of the other dimension in terms of x .

$x^2 + 2x + 3$

14 Find the solution set of the following inequality in $\mathbb{N}$:

$2x - 3 < 1$

S.S = $\{0, 1\}$



Follow for More!

Q1: Choose the correct answer

- 1 The area of the rhombus whose diagonal lengths are 6 cm, and 8cm, equals cm^2
 (a) 3 (b) 24 (c) 16 (d) 12
- 2 The area of the square = $\frac{1}{2}$ of the product of the lengths of its
 (a) sides (b) diagonals (c) heights (d) medians
- 3 A rhombus is of area 60 cm^2 and the length of one of its diagonals equals 10 cm. then the length of the other diagonal equals cm.
 (a) 4 (b) 8 (c) 10 (d) 12
- 4 A rhombus has a side length of 10 cm, and the lengths of its two diagonals are 12 cm and 16 cm. Its height = cm.
 (a) 96 (b) 10 (c) 9.6 (d) 6.9
- 5 A square whose side length is S and its area is A, then its area if its side is 2S is
 (a) A (b) 2A (c) 4A (d) A^2
- 6 The area of the square whose diagonal length is 6 cm. equals cm^2 .
 (a) 12 (b) 18 (c) 24 (d) 36
- 7 The area of trapezium whose middle base is 7 cm, and its height is 6 cm equals cm^2 .
 (a) 21 (b) 40 (c) 42 (d) 13
- 8 The lengths of the bases of trapezium is 6 cm and 10 cm, then the length of its middle base is cm.
 (a) 16 (b) 9 (c) 15 (d) 8



Q2: Answer The Following

- 1 A trapezium with a middle base of 19 cm and a height of 5 cm.
What is its area?

95 cm²

- 2 Determine the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 5 meters and 20 meters.

10 meters

- 3 A trapezium has an area of 315 square centimeters, a height of 15 cm, and the ratio between the lengths of its bases is 3 : 4
What is the length of each base?

18 cm

24 cm

- 4 A trapezium with an area of 150 square meters has bases measuring 10 meters and 20 meters. Calculate its height

10 meters

- 5 Find the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 4 meters and 25 meters.

10 meters



حمل الآن

مجانا وحصريا

المراجعة رقم (4)

اختبار شهر مارس



Unit 1**Q1 Choose the correct answer:-**

1) $7^2 \times 7^3 = \dots\dots\dots$

- a) 7^6 b) 14^5 c) 7^5 d) 49^6

2) $5^8 \div 5^4 = \dots\dots\dots$

- a) 14 b) 5^4 c) 1^2 d) 5^2

3) $3^5 \times \dots\dots\dots = 3^{10}$

- a) 3^2 b) 3^5 c) 3^{15} d) 3^3

4) $(-7)^9 \div \dots\dots\dots = (-7)^3$

- a) 7^6 b) -7^3 c) $(-7)^{12}$ d) 7^{27}

5) Half of the number $2^6 = \dots\dots\dots$

- a) 1^6 b) 2^3 c) 1^3 d) 2^5

6) Which of the following equals $(-9)^2$?

- a) -81 b) -18 c) 18 d) 81

7) If $7^n \times a^m = a \times 7 \times a \times a \times 7$, what is the value of $n + m$?

- a) 3 b) 2 c) 5 d) 6

8) Which of the following equals -3^4 ?

- a) -12 b) -7 c) -81 d) 81

9) Which of the following equals 2^{-4} ?

- a) -16 b) 16 c) $\frac{1}{8}$ d) $\frac{1}{16}$

10) Which of the following is the multiplicative inverse of $(-1)^3$?

- a) $(-1)^3$ b) $(-1)^2$ c) 1^3 d) 1^2

11) Which of the following is the additive inverse of 4^{-3} ?

- a) $(-4)^3$ b) $(-4)^{-3}$ c) 4^3 d) 4^{-3}

12) Which of the following equals $a^{-1} \times a^3$?

- a) a^2 b) a^4 c) $\frac{1}{a^2}$ d) $\frac{1}{a^3}$



13) Which of the following equals $\frac{y^{-2}}{y^{-6}}$?

- a) y^4 b) y^8 c) $\frac{1}{y^4}$ d) $\frac{1}{y^8}$

14) $5a^0 - (5a)^0 = \dots\dots\dots$

- a) 0 b) 5 c) 4 d) 10

15) Which of the following equals the third of the number 3^x ?

- a) 1^x b) $(\frac{1}{3})^x$ c) 3^{x-1} d) 3^{x+1}

16) Which of the following equals one quarter of the number 2^{20} ?

- a) 2^5 b) 2^{10} c) 2^{18} d) 2^{19}

17) Which of the following equals $2^a + 2^a$?

- a) 4^{2a} b) 2^a c) 2^{2a} d) 2^{a+1}

18) Which of the following numbers is written scientific notation ?

- a) $1.5 \times 10^{4.5}$ b) 15×10^5 c) 31.5×10^5 d) 3.15×10^5

19) Which of the following equals 8 million in scientific notation ?

- a) 8×10^7 b) 8×10^6 c) 8×10^8 d) 8×10^{-6}

20) Which of the following equals 0.000073 ?

- a) 7.3×10^{-5} b) 7.3×10^6 c) 7.3×10^5 d) 7.3×10^{-6}

21) If $6.3 \times 10^n = 0.00063$, what is the value of n ?

- a) -4 b) -3 c) 4 d) 3

22) If the number $y \times 10^{-9}$ is written in scientific notation, then y = ...

- a) 6 b) 60 c) 0.6 d) 600

23) Which of the following equals 6000×50 ?

- a) 30×10^5 b) 30×10^3 c) 300×10^2 d) 3×10^5

24) Which of the following is the greatest ?

- a) 6.3×10^5 b) 5.2×10^5 c) 9.8×10^4 d) 7.3×10^4

25) If $\sqrt{x} = 5$, then x =

- a) 10 b) 20 c) 25 d) ± 25



- 26) What is the value of $\sqrt{(-5)^2}$?
a) 5 b) -5 c) 25 d) ± 5
- 27) Which of the following equals $\sqrt{16x^2}$?
a) $4x$ b) $-4x$ c) $4x^2$ d) $4|x|$
- 28) Which of the following is the multiplicative inverse of $\sqrt{\frac{9}{25}}$?
a) $-\frac{5}{3}$ b) $\frac{5}{3}$ c) $-\frac{3}{5}$ d) $\frac{3}{5}$
- 29) Which of the following is the additive inverse of $-\sqrt{0.16}$?
a) 0.4 b) -0.4 c) 0.8 d) -0.8
- 30) If a , b are two square roots of the number c , then a + b=.....
a) 2a b) 2b c) 0 d) 1
- 31) If $x = \sqrt{\frac{1}{9}}$, what is the value of x^3 ?
a) $\frac{1}{3}$ b) $\frac{1}{9}$ c) $\frac{1}{27}$ d) $\frac{1}{81}$
- 32) $\sqrt{4 + \dots} = 4$
a) 0 b) 4 c) 12 d) 16
- 33) $\sqrt{36} + \sqrt{16} = \sqrt{\dots}$
a) 52 b) 10 c) 100 d) 120
- 34) If $x^3 = -27$, what is the value of x ?
a) 3 b) -9 c) -3 d) ± 3
- 35) What is the value of $\sqrt[3]{\sqrt{64}}$?
a) 2 b) 4 c) 8 d) 64
- 36) If $\sqrt[3]{b} = -8$, what is the value of b ?
a) 2 b) -2 c) -512 d) 64
- 37) If $\sqrt[3]{y} = -\sqrt{25}$, what is the value of y ?
a) 5 b) -5 c) -125 d) 125

38) $|\sqrt[3]{-125}| = \sqrt{\dots\dots\dots}$

a) 5

b) -5

c) -25

d) 25

39) If $a = 5^3$, then what is the value of $\sqrt[3]{a}$?

a) 5

b) 3

c) 125

d) 25

40) If $x^2 = 64$, then $\sqrt[3]{x} = \dots\dots\dots$

a) 2

b) -2

c) 4

d) ± 2

41) $\sqrt[3]{64 - \dots} = 3$

a) 9

b) 27

c) 37

d) 55

Q2 Complete the following:-

1) $(\frac{3}{5})^3 = \dots\dots\dots$

2) $\frac{5 \times 5^3}{5^4} = \dots\dots\dots$

3) $\frac{5^7 \times 5^2}{5^3 \times 5^5} = \dots\dots\dots$

4) $\frac{(-a)^4 \times a^6}{(-a)^3 \times (-a)^5} = \dots\dots\dots$

5) $\frac{x^7 \times x^{11}}{x^3 \times x^5} = \dots\dots\dots$

6) Double the number 2^{10} is $\dots\dots\dots$

7) half the number 2^{10} is $\dots\dots\dots$

8) $7^{10} \times 7^{-10} = 3^{\dots\dots\dots}$

9) $2x^{-2} y^{-3} = \frac{2}{\dots\dots\dots}$

10) If $x = y$, then $(-3)^{x-y} = \dots\dots\dots$

11) the multiplicative inverse of 5^{-1} is $\dots\dots\dots$

Q3 Answer the following:-

1) If $a=2$, $b=-5$, find the numerical value of

a) $3b^2$

b) $(3b)^2$

c) $a^3 + b^3$

d) $(a + b)^3$

2) Find the missing number :-

a) $a^{\dots} \times a^7 = a^9$

b) $b^{-3} \times b^{\dots} = 1$

c) $\frac{b^{\dots}}{b^4} = b^3$

3) Find the value of X in Z of the following equations :-

a) $\sqrt{x} + 1 = 7$

b) $\sqrt{x} = 9$

c) $2x^2 + 1 = 33$

Unit 2

Q1 Choose the correct answer:-

- 42) What is the inequality that expresses the following situation ,
Farida needs at least two hours to complete the homework ?
a) $x < 2$ b) $x > 2$ c) $x \leq 2$ d) $x \geq 2$
- 43) What is the inequality that expresses that the temperature X
is less than 40° ?
a) $x < 40^\circ$ b) $x > 40^\circ$ c) $x \leq 40^\circ$ d) $x \geq 40^\circ$
- 44) What is the inequality that expresses that twice the number X
is less than 5 ?
a) $x - 2 < 5$ b) $x + 2 > 5$ c) $2x < 5$ d) $2x > 5$
- 45) If $-x < 5$, then which of the following is correct ?
a) $x < 5$ b) $x > 5$ c) $x < -5$ d) $x > -5$
- 46) If $X \in \mathbb{N}$, what is the solution set of inequality $-X > 3$?
a) $\{-4, -5, \dots\}$ b) $\{4, 5, 6, \dots\}$ c) $\{-3\}$ d) $\emptyset$
- 47) If $X - 1 > 4$, then $X =$
a) 4 b) 3 c) 5 d) 7
- 48) Which of the following is equivalent to the inequality $\frac{X}{3} > 4$?
a) $x < 12$ b) $x > 12$ c) $x < \frac{4}{3}$ d) $x > \frac{4}{3}$
- 49) If $X > Y$, then $\frac{1}{X}$ $\frac{1}{Y}$
a) $<$ b) $>$ c) $=$ d) $\geq$
- 50) $(-3x^2)(4x^3) =$
a) $12x$ b) $12x^5$ c) $-12x^5$ d) $-12x^6$
- 51) $(3a^4 b)(5a^2 b^2)(2a^3) =$
a) $30a^{10} b^2$ b) $30a^9 b^3$ c) $60a^{11} b^3$ d) $15a^{10} b^3$

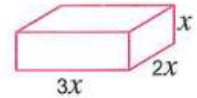
52) If the side length of a cube is $2b$, what is volume of the cube?

- a) $2b^3$ b) $8b^3$ c) $4b^3$ d) $4b^2$

53) $2(x+3) = \dots\dots\dots$

- a) $2x+3$ b) $2x^2+6x$ c) $2x+6$ d) $x+6$

54) What is the volume of the opposite cuboid ?



- a) $6x^3$ b) $6x$ c) $5x^3$ d) $6x^2$

55) What is the area of the opposite rectangle ?



- a) $12x-1$ b) $12x^2-4x$ c) $12x+4x$ d) $(12x)(4x)$

56) $x(x-1) + x = \dots\dots\dots$

- a) $2x^2$ b) x^2-x c) $x(2x-1)$ d) x^2

57) If $a+3b=7$, $c=3$, then what is the value of $a+3(b+c)$

- a) 10 b) 13 c) 15 d) 16

58) What is the number of terms in the expression resulting from the product of $(x-3)(x+4)$ in the simplest form ?

- a) 1 b) 2 c) 3 d) 4

59) If $(x-5)(x+2) = x^2+bx+c$, then $c = \dots\dots\dots$

- a) 10 b) 7 c) -10 d) -7

60) If $(3x-7)^2 = ax^2+bx+c$, then $b = \dots\dots\dots$

- a) 21 b) 42 c) -21 d) -42

61) I If $(x-3)(x+3) = x^2-k$, then $k = \dots\dots\dots$

- a) 6 b) 9 c) -6 d) -9

62) What is the coefficient of **ab** in the expression $(4a-5b)^2$?

- a) 20 b) 40 c) -20 d) -40



- 63) If $x-y=5$, $x+y=15$, then what is the value of x^2-y^2 ?
a) 10 b) 20 c) 3 d) 75
- 64) If $(x+y)^2=16$, $xy=3$ then what is the value of x^2+y^2 ?
a) 10 b) 48 c) 13 d) $5\frac{1}{3}$
- 65) If $y^2=7$, $x^2=10$, then what is the value of $(x+y)(x-y)$?
a) 17 b) 17 c) 3 d) -3
- 66) If $(x+y)^2=26$, $x^2+y^2=20$, what is the value of xy ?
a) 3 b) 6 c) 9 d) 12
- 67) $-12x^3 \div (-4x) = \dots\dots\dots$
a) $-3x^2$ b) $3x^2$ c) $48x^4$ d) $-3x$
- 68) If $\frac{8x}{a} = 1$, then $a = \dots\dots\dots$
a) 1 b) -1 c) $8x$ d) $-8x$
- 69) $\frac{a+b}{c} = \dots\dots\dots$
a) $\frac{a}{c} + b$ b) $a + \frac{b}{c}$ c) $\frac{ab}{c}$ d) $\frac{a}{c} + \frac{b}{c}$
- 70) $(x^2 \div x) + x = \dots\dots\dots$
a) $2x$ b) 0 c) $x+1$ d) $2x+1$
- 71) $(x^3+x^2) \div x^2 = \dots\dots\dots$
a) x b) 0 c) $x+1$ d) $2x+1$
- 72) $\frac{3x^2-6x}{3x} = \dots\dots\dots$
a) $-x^2$ b) $-x$ c) $x-2$ d) x^2-2x
- 73) $10ab^2 \div \dots\dots\dots = -2ab$
a) $-5b$ b) $5b$ c) $-5b^2$ d) $-12ab$

Q2 Complete the following :-

- 1) $6x^2y = 2x \times \dots\dots\dots$
- 2) $-4b^3c^4 = 2bc^2 \times \dots\dots\dots$
- 3) $(x+2)(x+3) = \dots\dots\dots + 5x + 6$
- 4) $(a-7)(a-3) = a^2 - \dots\dots\dots + \dots\dots\dots$
- 5) $\dots\dots\dots \div 7a^3 = -5a^2$
- 6) $(15a+5) \div 5 = \dots\dots\dots$
- 7) $\frac{-24x^4}{\dots\dots\dots} = -6x$

Q3 Answer the following :-

1) Find the solution set in $\mathbb{N}$:-

- a) $x - 2 > 1$
- b) $2x - 5 > -7$

2) Find the solution set in $\mathbb{Z}$:-

- a) $2x + 5 \leq 11$
- b) $5 - 3x \geq 14$

3) Find the solution set in $\mathbb{Q}$:-

a) $x - 2 \leq 3x + 7$

b) $3(2x - 1) > 9$

4) Find in the simplest form :-

a) $(-3a^3b^2)(-2ab^4)$

b) $-3x(x-5)$

c) $-3a^2b(2a b^2 - 2b)$

d) $(3x+1)(x-3)$

e) $(x-7)(2x-1)$

f) $(x-6)^2$

g) $(2x-9)^2$

h) $-32a^3b^6 \div (-4a^3b^2)$

i) $(2x - 6x^2 - 8x^3) \div (2x)$

j) $\frac{18x^2y^2}{-2x^2y}$

k) $\frac{3xy^2 + 6x^2y - 9x^2y^2}{3xy}$

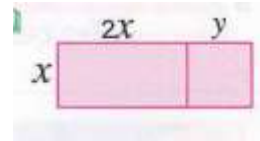
l) $\frac{x^2}{-x} + \frac{-4x}{x} - \frac{3x^3}{x^2}$

m) $(X^2 + 5x + 6) \div (x + 2)$

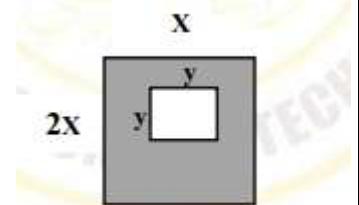
n)

5) Find in the simplest form $2a(3a-1) + 3a(a+2)$ then find the value of the expression if $a=2$.

- 6) Find in the simplest form the expression which represents the shaded part .



- 7) Find in the simplest form the expression which represents the shaded part .



- 8) If: $(x - 5)(x + 5) = x^2 + bx + c$, then what is the value of b ?
- 9) If $(2x + 1)$ is a factor of the expression $(2x^2 - 7x - 4)$, then find the other factor ?
- 10) Divide $(x^2 - 64)$ by $(x - 8)$

Answers

Q1 Choose the correct answer:-

- 1) $7^2 \times 7^3 = \dots\dots\dots$
 a) 7^6 b) 14^5 **c) 7^5** d) 49^6
- 2) $5^8 \div 5^4 = \dots\dots\dots$
 a) 14 **b) 5^4** c) 1^2 d) 5^2
- 3) $3^5 \times \dots\dots\dots = 3^{10}$
 a) 3^2 **b) 3^5** c) 3^{15} d) 3^3
- 4) $(-7)^9 \div \dots\dots\dots = (-7)^3$
a) 7^6 b) -7^3 c) $(-7)^{12}$ d) 7^{27}
- 5) Half of the number $2^6 = \dots\dots\dots$
 a) 1^6 b) 2^3 c) 1^3 **d) 2^5**
- 6) Which of the following equals $(-9)^2$?
 a) -81 b) -18 c) 18 **d) 81**
- 7) If $7^n \times a^m = a \times 7 \times a \times a \times 7$, what is the value of $n + m$?
 a) 3 b) 2 **c) 5** d) 6
- 8) Which of the following equals -3^4 ?
 a) -12 b) -7 **c) -81** d) 81
- 9) Which of the following equals 2^{-4} ?
 a) -16 b) 16 c) $\frac{1}{8}$ **d) $\frac{1}{16}$**
- 10) Which of the following is the multiplicative inverse of $(-1)^3$?
a) $(-1)^3$ b) $(-1)^2$ c) 1^3 d) 1^2
- 11) Which of the following is the additive inverse of 4^{-3} ?
 a) $(-4)^3$ **b) $(-4)^{-3}$** c) 4^3 d) 4^{-3}
- 12) Which of the following equals $a^{-1} \times a^3$?
a) a^2 b) a^4 c) $\frac{1}{a^2}$ d) $\frac{1}{a^3}$

13) Which of the following equals $\frac{y^{-2}}{y^{-6}}$?

a) y^4

b) y^8

c) $\frac{1}{y^4}$

d) $\frac{1}{y^8}$

14) $5a^0 - (5a)^0 = \dots\dots\dots$

a) 0

b) 5

c) 4

d) 10

15) Which of the following equals the third of the number 3^x ?

a) 1^x

b) $(\frac{1}{3})^x$

c) 3^{x-1}

d) 3^{x+1}

16) Which of the following equals one quarter of the number 2^{20} ?

a) 2^5

b) 2^{10}

c) 2^{18}

d) 2^{19}

17) Which of the following equals $2^a + 2^a$?

a) 4^{2a}

b) 2^a

c) 2^{2a}

d) 2^{a+1}

18) Which of the following numbers is written scientific notation ?

a) $1.5 \times 10^{4.5}$

b) 15×10^5

c) 31.5×10^5

d) 3.15×10^5

19) Which of the following equals 8 million in scientific notation ?

a) 8×10^7

b) 8×10^6

c) 8×10^8

d) 8×10^{-6}

20) Which of the following equals 0.000073 ?

a) 7.3×10^{-5}

b) 7.3×10^6

c) 7.3×10^5

d) 7.3×10^{-6}

21) If $6.3 \times 10^n = 0.00063$, what is the value of n ?

a) -4

b) -3

c) 4

d) 3

22) If the number $y \times 10^{-9}$ is written in scientific notation, then $y = \dots$

a) 6

b) 60

c) 0.6

d) 600

23) Which of the following equals 6000×50 ?

a) 30×10^5

b) 30×10^3

c) 300×10^2

d) 3×10^5

24) If $\sqrt{x} = 5$, then $x = \dots\dots\dots$

a) 10

b) 20

c) 25

d) ± 25

25) Which of the following is the greatest ?

a) 6.3×10^5

b) 5.2×10^5

c) 9.8×10^4

d) 7.3×10^4



26) What is the value of $\sqrt{(-5)^2}$?

a) 5

b) -5

c) 25

d) ± 5

27) Which of the following equals $\sqrt{16x^2}$?

a) $4x$ b) $-4x$ c) $4x^2$ d) $4|x|$

28) Which of the following is the multiplicative inverse of $\sqrt{\frac{9}{25}}$?

a) $-\frac{5}{3}$ b) $\frac{5}{3}$ c) $-\frac{3}{5}$ d) $\frac{3}{5}$

29) Which of the following is the additive inverse of $-\sqrt{0.16}$?

a) 0.4

b) -0.4

c) 0.8

d) -0.8

30) If a , b are two square roots of the number c , then $a + b = \dots$

a) $2a$ b) $2b$

c) 0

d) 1

31) If $x = \sqrt{\frac{1}{9}}$, what is the value of x^3 ?

a) $\frac{1}{3}$ b) $\frac{1}{9}$ c) $\frac{1}{27}$ d) $\frac{1}{81}$

32) $\sqrt{4 + \dots} = 4$

a) 0

b) 4

c) 12

d) 16

33) $\sqrt{36} + \sqrt{16} = \sqrt{\dots}$

a) 52

b) 10

c) 100

d) 120

34) If $x^3 = -27$, what is the value of x ?

a) 3

b) -9

c) -3

d) ± 3

35) What is the value of $\sqrt[3]{\sqrt{64}}$?

a) 2

b) 4

c) 8

d) 64

36) If $\sqrt[3]{b} = -8$, what is the value of b ?

a) 2

b) -2

c) -512

d) 64

37) If $\sqrt[3]{y} = -\sqrt{25}$, what is the value of y ?

a) 5

b) -5

c) -125

d) 125

38) $|\sqrt[3]{-125}| = \sqrt{\dots\dots\dots}$

a) 5

b) -5

c) -25

d) 25

39) If $a = 5^3$, then what is the value of $\sqrt[3]{a}$?

a) 5

b) 3

c) 125

d) 25

40) If $x^2 = 64$, then $\sqrt[3]{x} = \dots\dots\dots$

a) 2

b) -2

c) 4

d) ± 2

41) $\sqrt[3]{64 - \dots} = 3$

a) 9

b) 27

c) 37

d) 55

Q2 Complete the following:-

1) $(\frac{3}{5})^3 = \frac{27}{125}$

2) $\frac{5 \times 5^3}{5^4} = \frac{5^4}{5^4} = 5^0 = 1$

3) $\frac{5^7 \times 5^2}{5^3 \times 5^5} = \frac{5^9}{5^8} = 5$

4) $\frac{(-a)^4 \times a^6}{(-a)^3 \times (-a)^5} = \frac{a^{10}}{a^8} = a^2$

5) $\frac{x^7 \times x^{11}}{x^3 \times x^5} = \frac{x^{18}}{x^8} = x^{10}$

6) Double the number 2^{10} is 2^{11}

7) half the number 2^{10} is 2^9

8) $7^{10} \times 7^{-10} = 3^0$

9) $2x^{-2} y^{-3} = \frac{2}{x^2 y^3}$

10) If $x = y$, then $(-3)^{x-y} = 1$

11) the multiplicative inverse of 5^{-1} is 5



Q3 Answer the following:-

1) If $a=2$, $b=-5$, find the numerical value of

a) $3b^2$

a) $3 \times (-5)^2 = 75$

b) $(3b)^2$

b) $(3 \times -5)^2 = 225$

c) $a^3 + b^3$

c) $2^3 + (-5)^3 = -117$

d) $(a + b)^3$

d) $[2 + (-5)] = -27$

2) Find the missing number :-

a) $a^2 \times a^7 = a^9$

b) $b^{-3} \times b^3 = 1$

c) $\frac{b^7}{b^4} = b^3$

3) Find the value of X in Z of the following equations :-

a) $\sqrt{x} + 1 = 7$

$$\sqrt{x} = 7 - 1$$

$$\sqrt{x} = 6 , x = 36$$

b) $\sqrt{x} = 9 , x = 81$

c) $2x^2 + 1 = 33$

$$2x^2 = 33 - 1$$

$$2x^2 = 32$$

$$x^2 = 32 \div 2 = 16 , x = \sqrt{16} = \pm 4$$

Unit 2

Q1 Choose the correct answer:-

- 1) What is the inequality that expresses the following situation , Farida needs at least two hours to complete the homework ?
 a) $x < 2$ b) $x > 2$ c) $x \leq 2$ **d) $x \geq 2$**
- 2) What is the inequality that expresses that the temperature X is less than 40° ?
a) $x < 40^\circ$ b) $x > 40^\circ$ c) $x \leq 40^\circ$ d) $x \geq 40^\circ$
- 3) What is the inequality that expresses that twice the number X is less than 5 ?
 a) $x - 2 < 5$ b) $x + 2 > 5$ **c) $2x < 5$** d) $2x > 5$
- 4) If $-x < 5$, then which of the following is correct ?
 a) $x < 5$ b) $x > 5$ c) $x < -5$ **d) $x > -5$**
- 5) If $X \in \mathbb{N}$, what is the solution set of inequality $-X > 3$?
 a) $\{-4, -5, \dots\}$ b) $\{4, 5, 6, \dots\}$ c) $\{-3\}$ **d) $\emptyset$**
- 6) If $X - 1 > 4$, then $X = \dots\dots\dots$
 a) 4 b) 3 c) 5 **d) 7**
- 7) Which of the following is equivalent to the inequality $\frac{X}{3} > 4$?
 a) $x < 12$ **b) $x > 12$** c) $x < \frac{4}{3}$ d) $x > \frac{4}{3}$
- 8) If $X > Y$, then $\frac{1}{X} \dots\dots\dots \frac{1}{Y}$
a) $<$ b) $>$ c) $=$ d) $\geq$
- 9) $(-3x^2)(4x^3) = \dots\dots\dots$
 a) $12x$ b) $12x^5$ **c) $-12x^5$** d) $-12x^6$
- 10) $(3a^4 b)(5a^2 b^2)(2a^3) = \dots\dots\dots$
 a) $30a^{10} b^2$ **b) $30a^9 b^3$** c) $60a^{11} b^3$ d) $15a^{10} b^3$

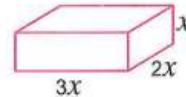
11) If the side length of a cube is $2b$, what is volume of the cube?

- a) $2b^3$ **b) $8b^3$** c) $4b^3$ d) $4b^2$

12) $2(x+3) = \dots\dots\dots$

- a) $2x+3$ b) $2x^2+6x$ **c) $2x+6$** d) $x+6$

13) What is the volume of the opposite cuboid ?



- a) $6x^3$** b) $6x$ c) $5x^3$ d) $6x^2$

14) What is the area of the opposite rectangle ?



- a) $12x-1$ **b) $12x^2-4x$** c) $12x+4x$ d) $(12x)(4x)$

15) $x(x-1) + x = \dots\dots\dots$

- a) $2x^2$ b) x^2-x c) $x(2x-1)$ **d) x^2**

16) If $a+3b=7$, $c=3$, then what is the value of $a+3(b+c)$

- a) 10 b) 13 c) 15 **d) 16**

17) What is the number of terms in the expression resulting from the product of $(x-3)(x+4)$ in the simplest form ?

- a) 1 b) 2 **c) 3** d) 4

18) If $(x-5)(x+2) = x^2+bx+c$, then $c = \dots\dots\dots$

- a) 10 b) 7 **c) -10** d) -7

19) If $(3x-7)^2 = ax^2+bx+c$, then $b = \dots\dots\dots$

- a) 21 b) 42 c) -21 **d) -42**

20) I If $(x-3)(x+3) = x^2-k$, then $k = \dots\dots\dots$

- a) 6 **b) 9** c) -6 d) -9

21) What is the coefficient of **ab** in the expression $(4a-5b)^2$?

- a) 20 b) 40 c) -20 **d) -40**



22) If $x-y=5$, $x+y=15$, then what is the value of x^2-y^2 ?

- a) 10 b) 20 c) 3 d) 75

23) If $(x+y)^2=16$, $xy=3$ then what is the value of x^2+y^2 ?

- a) 10 b) 48 c) 13 d) $5\frac{1}{3}$

24) If $y^2=7$, $x^2=10$, then what is the value of $(x+y)(x-y)$?

- a) 17 b) 17 c) 3 d) -3

25) If $(x+y)^2=26$, $x^2+y^2=20$, what is the value of xy ?

- a) 3 b) 6 c) 9 d) 12

26) $-12x^3 \div (-4x) = \dots\dots\dots$

- a) $-3x^2$ b) $3x^2$ c) $48x^4$ d) $-3x$

27) If $\frac{8x}{a} = 1$, then $a = \dots\dots\dots$

- a) 1 b) -1 c) $8x$ d) $-8x$

28) $\frac{a+b}{c} = \dots\dots\dots$

- a) $\frac{a}{c} + b$ b) $a + \frac{b}{c}$ c) $\frac{ab}{c}$ d) $\frac{a}{c} + \frac{b}{c}$

29) $(x^2 \div x) + x = \dots\dots\dots$

- a) $2x$ b) 0 c) $x+1$ d) $2x+1$

30) $(x^3+x^2) \div x^2 = \dots\dots\dots$

- a) x b) 0 c) $x+1$ d) $2x+1$

31) $\frac{3x^2-6x}{3x} = \dots\dots\dots$

- a) $-x^2$ b) $-x$ c) $x-2$ d) x^2-2x

32) $10ab^2 \div \dots\dots\dots = -2ab$

- a) $-5b$ b) $5b$ c) $-5b^2$ d) $-12ab$

Q2 Complete the following :-

- 1) $6x^2y = 2x \times 3xy$
- 2) $-4b^3c^4 = 2bc^2 \times -2b^2c^2$
- 3) $(x+2)(x+3) = x^2 + 5x + 6$
- 4) $(a-7)(a-3) = a^2 - 10a + 21$
- 5) $-35a^5 \div 7a^3 = -5a^2$
- 6) $(15a+5) \div 5 = 3a + 1$
- 7) $\frac{-24x^4}{4x^3} = -6x$

Q3 Answer the following :-

- 1) Find the solution set in $\mathbb{N}$:-

a) $x - 2 > 1$

$$x > 2+1$$

$$x > 3$$

$$S.S = \{4, 5, 6, \dots, \dots, \dots\}$$

b) $2x - 5 > -7$

$$2x > -7+5$$

$$2x > -2$$

$$x > -2 \div 2$$

$$x > -1$$

$$S.S = \{0, 1, 2, 3, \dots, \dots, \dots\}$$

2) Find the solution set in $\mathbb{Z}$:-

a) $2x + 5 \leq 11$

$$2x \leq 11 - 5$$

$$2x \leq 6$$

$$x \leq 6 \div 2$$

$$x \leq 3$$

$$S.S = \{3, 2, 1, 0, -1, -2, \dots\}$$

b) $5 - 3x \geq 14$

$$5 - 3x \geq 14$$

$$-3x \geq 14 - 5$$

$$-3x \geq 9$$

$$x \geq 9 \div (-3)$$

$$x \leq -3$$

$$S.S = \{-3, -4, -5, \dots\}$$

3) Find the solution set in $\mathbb{Q}$:-

a) $x - 2 \leq 3x + 7$

$$x - 3x \leq 7 + 2$$

$$-2x \leq 9$$

$$x \leq 9 \div (-2)$$

$$x \geq -4.5$$

$$S.S = X : X \in \mathbb{Q}, x \geq -4.5$$



b) $3(2x - 1) > 9$

$$6x - 3 > 9$$

$$6x > 9 + 3$$

$$6x > 12$$

$$x > 12 \div 6$$

$$x > 2$$

$$S.S = \{X: X \in Q, x > 2\}$$

4) Find in the simplest form :-

o) $(-3a^3b^2)(-2ab^4) = 6a^4b^6$

p) $-3x(x-5) = -3x^2 + 15x$

a) $-3a^2b(2a b^2 - 2b) = -6a^3 b^3 + 6a^2 b^2$

a) $(3x+1)(x-3) = 3x^2 - 8x - 3$

b) $(x-7)(2x-1) = 2x^2 - 15x + 7$

c) $(x-6)^2 = x^2 - 12x + 36$

d) $(2x-9)^2 = 4x^2 - 36x + 81$

e) $-32a^3b^6 \div (-4a^3b^2) = 8b^4$

f) $(2x - 6x^2 - 8x^3) \div (2x) = 1 - 3x - 4x^2$

g) $\frac{18x^2y^2}{-2x^2y} = -9y$

h) $\frac{3xy^2 + 6x^2y - 9x^2y^2}{3xy} = y + 2x - 3xy$

i) $\frac{x^2}{-x} + \frac{-4x}{x} - \frac{3x^3}{x^2} = -x - 4 - 3x = -4x - 4$

j) $(X^2+5x+6) \div (x+2) = x + 3$

- 5) Find in the simplest form $2a(3a-1)+3a(a+2)$ then find the value of the expression if $a=2$.

$$=6a^2 - 2a + 3a^2 + 6a$$

$$=9a^2 + 4a$$

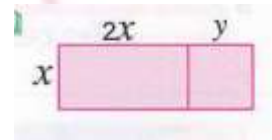
$$\text{If } a = 2$$

$$9 \times 2^2 + 4 \times 2 = 44$$

- 6) Find in the simplest form the expression which represents the shaded part .

$$= x(2x+y)$$

$$= 2x^2 + xy$$

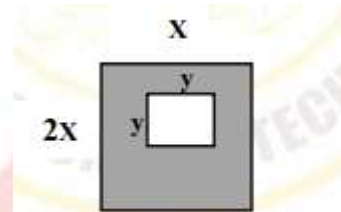


- 7) Find in the simplest form the expression which represents the shaded part .

$$\text{area 1} = 2X \times X = 2X^2$$

$$\text{area 2} = Y \times X = XY$$

$$\text{area of shaded part} = 2X^2 - XY$$



- 8) If: $(x - 5)(x + 5) = x^2 + bx + c$, then what is the value of b ?

$$b = \text{zero}$$

- 9) If $(2x + 1)$ is a factor of the expression $(2x^2 - 7x - 4)$, then find the other factor ?

$$(x-4)$$

- 10) Divide $(x^2 - 64)$ by $(x - 8)$

$$(x+8)$$

End of 1st MonthQ1 Choose the correct answer :-

1) Which of the following is equivalent to $-x \leq -2$?

- a) $-x \geq -2$ b) $x \geq -2$ c) $-x \leq 2$ d) $x \geq 2$

2) $x(x + 2) = \dots\dots\dots$

- a) $x^2 + x$ b) $x^2 + 2x$ c) $x + 2x$ d) $x^3 + 2x^2$

3) If the lengths of two diagonals of a rhombus are 8 cm and 10 cm. then Its area is square centimeters.

- a) 80 b) 160 c) 40 d) 18

4) If : $(x - 3)(x + 3) = x^2 - k$, What is the value of k?

- a) 3 b) 9 c) 0 d) 6

5) $(x^2 + x) \div x = \dots\dots\dots$

- a) x b) $x + 1$ c) 0 d) $2x + 1$

6) Which of the following is equal to 0.0000052 ?

- a) 5.2×10^5 b) 5.2×10^{-6} c) 5.2×10^6 d) 5.2×10^{-5}

7) A rhombus has a side length of 10 cm, and the lengths of its two diagonals are 12 cm and 16 cm. Its height = cm.

- a) 96 b) 6 c) 9.6 d) 6.9

8) The multiplicative inverse of $\sqrt{\frac{25}{16}}$ is First Preparatory

- a) $\frac{-5}{4}$ b) $\frac{-4}{5}$ c) $\frac{4}{5}$ d) $\frac{5}{4}$

9) The area of a square whose its diagonal 12 cm is square centimeters.



- a) 36 b) 72 c) 144 d) 180

10) If: $x^3 = -27$, what is the value of x ?

- a) 3 b) -3 c) -9 d) ± 3

11) If: $2^2 \times a = a^{20}$, what is the value of a ?

- a) 2^{16} b) 2^{24} c) 2^5 d) 2

12) If: $2.5 \times 10^n = 0.000025$, what is the value of n ?

- a) -5 b) 4 c) -4 d) 5

Q2 Answer the following :-

1) Find the solution set of the following inequality in $\mathbb{N}$: $2x - 3 \leq 1$

2) Find the solution set of the following inequality in $\mathbb{Z}$: $4 - 2x < -6$

3) Calculate the area of a rectangle whose length is 5 units greater than its width, and whose width is equal to x units of length.

4) If the area of a rectangle is $(4x^4 + 8x^3 + 12x^2)$ square units, and the length of one of its dimensions is $(4x^2)$ units of length, find the length of the other dimension in terms of x .

- 5) Simplify in the simplest form: $\frac{6x^3(3x^2-6x-9)}{9x^2}$, Then find the numerical value of the result when $x = 1$
- 6) Find in simplest form: $(3x - 2)(x^2 - 2x + 5)$
- 7) Which has a larger area: a rhombus whose diagonals lengths are 6 cm and 8 cm or a square whose diagonal length is 8 cm?
- 8) Find the length of diagonal of a square whose area is equal to the area of a rhombus whose diagonals lengths are 4 meters and 25 meters.
- 9) Simplify in the simplest form: $(x + 2)^2 - x(x + 4)$
- 10) Find the quotient of: $(x^2 + 9x + 20)$ divided by $(x + 4)$
- 11) Find in simplest form: $\sqrt{\frac{81}{49}} + \left(\frac{3}{4}\right)^0 + \sqrt[3]{\frac{125}{343}}$
- 12) Find in simplest form: $\frac{(-3)^5 + (-3)^6}{(-3)^3 + (-3)^5}$
- 13) If $(2x - 1)$ is one factor of the expression $(2x^2 + 7x - 4)$, find the other factor.
- 14) Find the value of x in each of the following:

1) $2x^2 - 5 = 13$

2) $3x^3 + 15 = 96$

15) Write the result of the following in scientific notation: $(4.5 \times 10^7) \times (4 \times 10^8)$

16) Find the solution set of the inequality: $5x + 6 \leq 4x + 2$ ($x \in \mathbb{Q}$)

17) Find in simplest form: $\frac{4x^5}{x^5} + \frac{x^4}{x^3} + \frac{x^3}{-x^3}$

18) If the expression $(x^3 - x^2 - 4x - m)$ is divisible by $(x - 3)$, find the value of m

Answers


For more steps
watch 

Q1 Choose the correct answer :-

1) Which of the following is equivalent to $-x \leq -2$?

- a) $-x \geq -2$ b) $x \geq -2$ c) $-x \leq 2$ **d) $x \geq 2$**

2) $x(x + 2) = \dots\dots\dots$

- a) $x^2 + x$ **b) $x^2 + 2x$** c) $x + 2x$ d) $x^3 + 2x^2$

3) If the lengths of two diagonals of a rhombus are 8 cm and 10 cm. then Its area is square centimeters.

- a) 80 b) 160 c) **40** d) 18

4) If : $(x - 3)(x + 3) = x^2 - k$, What is the value of k?

- a) 3 b) **9** c) 0 d) 6

5) $(x^2 + x) \div x = \dots\dots\dots$

- a) x b) **$x + 1$** c) 0 d) $2x + 1$

6) Which of the following is equal to 0.0000052 ?

- a) 5.2×10^5 b) **5.2×10^{-6}** c) 5.2×10^6 d) 5.2×10^{-5}

7) A rhombus has a side length of 10 cm, and the lengths of its two diagonals are 12 cm and 16 cm. Its height = cm.

- a) 96 b) 6 c) **9.6** d) 6.9

8) The multiplicative inverse of $\sqrt{\frac{25}{16}}$ is First Preparatory

- a) $\frac{-5}{4}$ b) $\frac{-4}{5}$ c) **$\frac{4}{5}$** d) $\frac{5}{4}$

9) The area of a square whose its diagonal 12 cm is square centimeters.

- a) 36 b) 72 c) 144 d) 180

10) If: $x^3 = -27$, what is the value of x ?

- a) 3 b) -3 c) -9 d) ± 3

11) If: $2^2 \times a = a^{20}$, what is the value of a ?

- a) 2^{16} b) 2^{24} c) 2^5 d) 2

12) If: $2.5 \times 10^n = 0.000025$, what is the value of n ?

- a) -5 b) 4 c) -4 d) 5

For more steps
watch 

Q2 Answer the following :-

1) Find the solution set of the following inequality in $\mathbb{N}$: $2x - 3 \leq 1$

$$2x \leq 1 + 3 \qquad 2x \leq 4 \qquad x \leq 4 \div 2$$

$$S.S = \{0, 1, 2\}$$

2) Find the solution set of the following inequality in $\mathbb{Z}$: $4 - 2x < -6$

$$-2x < -6 - 4 \qquad -2x < -10 \qquad x < -10 \div -2 \qquad x > 5$$

$$S.S = \{6, 7, 8, \dots\}$$

3) Calculate the area of a rectangle whose length is 5 units greater than its width, and whose width is equal to x units of length.

$$\text{Width} = x$$

$$L = x + 5$$

$$\text{Area} = x(x + 5) = x^2 + 5x$$



4) If the area of a rectangle is $(4x^4 + 8x^3 + 12x^2)$ square units, and the length of one of its dimensions is $(4x^2)$ units of length, find the length of the other dimension in terms of x .

$$\frac{4x^4 + 8x^3 + 12x^2}{4x^2} = x^2 + 2x + 3$$

5) Simplify in the simplest form: $\frac{6x^3(3x^2-6x-9)}{9x^2}$, Then find the numerical value of the result when $x = 1$

$$\frac{18x^5 - 36x^4 - 54x^3}{9x^2} = 2x^3 - 4x^2 - 6x$$

When $x = 1$ then the value = $2 \times 1^3 - 4 \times 1^2 - 6 \times 1 = -8$

6) Find in simplest form: $(3x - 2)(x^2 - 2x + 5)$

$$3x^3 - 6x^2 + 15x - 2x^2 + 4x - 10 = 3x^3 - 8x^2 + 19x - 10$$

7) Which has a larger area: a rhombus whose diagonals lengths are 6 cm and 8 cm or a square whose diagonal length is 8 cm?

$$\text{Area of rhombus} = \frac{1}{2} \times 6 \times 8 = 24\text{cm}^2$$

$$\text{Area of square} = \frac{1}{2} \times 8 \times 8 = 32\text{cm}^2$$

Square is the greatest



8) Find the length of diagonal of a square whose area is equal to the area of a rhombus whose diagonals lengths are 4 meters and 25 meters.

$$\text{Area of rhombus} = \frac{1}{2} \times 4 \times 25 = 50\text{cm}^2$$

Area of a square = Area of rhombus

$$\frac{1}{2} \times d^2 = 50 \quad d^2 = 50 \times 2 = 100 \quad d = \sqrt{100} = 10\text{cm}$$

9) Simplify in the simplest form: $(x + 2)^2 - x(x + 4)$

$$x^2 + 4x + 4 - x^2 - 4x = 4$$

10) Find the quotient of: $(x^2 + 9x + 20)$ divided by $(x + 4)$

$$= x + 5$$

11) Find in simplest form: $\sqrt{\frac{81}{49}} + \left(\frac{3}{4}\right)^0 + \sqrt[3]{\frac{125}{343}}$

$$= 3$$

For more steps
watch 

12) Find in simplest form: $\frac{(-3)^5 + (-3)^6}{(-3)^3 + (-3)^5}$

$$= -27$$

13) If $(2x - 1)$ is one factor of the expression $(2x^2 + 7x - 4)$, find the other factor.

$$x + 4$$

14) Find the value of x in each of the following:

1) $2x^2 - 5 = 13$ $x = \pm 3$

2) $3x^3 + 15 = 96$ $x = 3$

15) Write the result of the following in scientific notation:

$$(4.5 \times 10^7) \times (4 \times 10^8) = 1.8 \times 10^{14}$$

16) Find the solution set of the inequality: $5x + 6 \leq 4x + 2$ ($x \in \mathbb{Q}$)

$$x \leq -4$$

$$S.S = \{x: x \in \mathbb{Q}, x \leq -4\}$$



17) Find in simplest form: $\frac{4x^5}{x^5} + \frac{x^4}{x^3} + \frac{x^3}{-x^3}$

= 3 + x

18) If the expression $(x^3 - x^2 - 4x - m)$ is divisible by $(x - 3)$, find the value of m

m = 6

حمل الآن

مجاناً وحصرياً

المراجعة رقم (5)

اختبار شهر مارس





Question 1

Choose the correct answer

- 1 Which of the following equals $(-2)^3$?
 (a) -6 (b) 6 (c) -8 (d) 8
- 2 Which of the following is the multiplicative inverse of the number $(-1)^3$?
 (a) $(-1)^3$ (b) $(-1)^2$ (c) 1^3 (d) 1^2
- 3 $(-4)^0 = \dots\dots\dots$
 (a) 0 (b) 4 (c) -4 (d) 1
- 4 $2y^{-1} = \dots\dots\dots$
 (a) $2y$ (b) $-2y$ (c) $\frac{2}{y}$ (d) $\frac{1}{2y}$
- 5 $(-2)^9 \dots\dots\dots (-2)^{10}$
 (a) $>$ (b) $<$ (c) $=$ (d) otherwise
- 6 If $x = y$, then $\left(\frac{3}{5}\right)^{x-y} = \dots\dots\dots$
 (a) 0 (b) 1 (c) $\frac{3}{5}$ (d) $\frac{5}{3}$
- 7 If $a = -3$, then $a^{-2} = \dots\dots\dots$
 (a) $\frac{1}{9}$ (b) -9 (c) -6 (d) 9
- 8 If $a = 6^x$, $b = 6^{-x}$, then $a \times b = \dots\dots\dots$
 (a) 6^{2x} (b) 36^{2x} (c) 1 (d) 0
- 9 $2^4 - 2^3 = \dots\dots\dots$
 (a) 2^2 (b) 2^3 (c) 16 (d) 2





- 10 Which of the following equals a third of the number 3^x ?
 (a) 1^x (b) 3^{x-1} (c) 3^{x+1} (d) $\left(\frac{1}{3}\right)^x$
- 11 Which of the following is one quarter of the number 2^{20} ?
 (a) 2^5 (b) 2^{10} (c) 2^{19} (d) 2^{18}
- 12 If half $2^{50} = 2^x$, then $x = \dots\dots\dots$
 (a) 10 (b) 25 (c) 51 (d) 49
- 13 If $6.3 \times 10^n = 0.00063$, what is the value of n ?
 (a) -4 (b) -3 (c) 4 (d) 3
- 14 If the number $(y \times 10)$ is written in scientific notation, what could be the value of y ?
 (a) 0.6 (b) 6 (c) 60 (d) 600
- 15 If $39 \times 10^{-8} = k \times 10^{-7}$, what is the value of k ?
 (a) 39 (b) 3.9 (c) 0.39 (d) 0.039
- 16 Which of the following numbers is not in scientific notation ?
 (a) 1.5×10^5 (b) 17×10^5 (c) 3.15×10^5 (d) 9.85×10^5
- 17 Which of the following expresses the number 8 million in scientific notation?
 (a) 8×10^7 (b) 8×10^6 (c) 8×10^{-6} (d) 8×10^8
- 18 Which of the following equals $a^{-1} \times a^3$?
 (a) a^4 (b) a^2 (c) $\frac{1}{a^4}$ (d) $\frac{1}{a^2}$





19 If $2^4 \times a = 2^{20}$, then $a = \dots\dots\dots$

(a) 2^4

(b) 2^5

(c) 2^{16}

(d) 2^{24}

20 $3^a + 3^a + 3^a = \dots\dots\dots$

(a) 3

(b) 3^a

(c) 3^{3a}

(d) 3^{a+1}

21 $(3.6 \times 10^{-4}) \dots\dots\dots 0.000036$

(a) >

(b) <

(c) =

(d) otherwise

22 Which of the following equals $\sqrt{16x^2}$?

(a) $4x^2$

(b) $4x$

(c) $4|x|$

(d) $-4x$

23 If a and b are the square roots of the number c , what is $a + b$ equal to ?

(a) $2a$

(b) $2b$

(c) 0

(d) 1

24 $\sqrt{4 + \dots\dots\dots} = 4$

(a) 2

(b) 12

(c) 16

(d) 8

25 What is the multiplicative inverse of the number $\sqrt{\frac{9}{25}}$?

(a) $-\frac{3}{5}$

(b) $\frac{3}{5}$

(c) $-\frac{5}{3}$

(d) $\frac{5}{3}$

26 If $X = \sqrt{\frac{1}{9}}$, what is the value of X^3 ?

(a) $\frac{1}{9}$

(b) $\frac{1}{27}$

(c) $\frac{1}{3}$

(d) $\frac{1}{81}$

27 What is the value of $\sqrt[3]{0.008}$ in simplest form ?

(a) 0.0002

(b) $\frac{1}{2}$

(c) $\frac{1}{5}$

(d) $\frac{8}{10}$

28 $\sqrt[3]{64 - \dots\dots\dots} = 3$

(a) 9

(b) 27

(c) 37

(d) 4





29 If $\sqrt{x} = 27$, what is the value of $\sqrt[3]{x}$?

(a) 9

(b) 3

(c) 81

(d) 27

30 $\sqrt[3]{-125} = \sqrt{\dots\dots\dots}$

(a) 5

(b) -5

(c) 25

(d) -25

31 If $\sqrt[3]{b} = -8$, what is the value of b ?

(a) -2

(b) -512

(c) 64

(d) 2

32 If $x^3 = -27$, what is the value of X ?

(a) 0.0002

(b) ± 3

(c) -3

(d) -9

33 $\sqrt{(10)^2 - (6)^2} = 10 - \dots\dots\dots$

(a) 6

(b) 2

(c) 3

(d) 4

34 $\sqrt{36 + 64} = 6 + \dots\dots\dots$

(a) 8

(b) 16

(c) 4

(d) 10

35 $\sqrt[3]{125} = \sqrt{x}$ What is the value of X ?

(a) 5

(b) -5

(c) 3

(d) 25

36 If a cube with an edge length of $3x$, then its volume =

(a) $6x^2$

(b) $9x^2$

(c) $27x^3$

(d) $9x$





Question 2

Answer the following

- 1** If a and b are two positive integers and $a^b = 64$, find the smallest value of $(a + b)$.
-
-
- 2** If $x = -3$, and $y = 4$, then find the numerical value of each of the following :-
- a** $(-x)^3$
- b** $x^2 + y^2$
- 3** If a and b are two positive integers and $ba = 64$, find the smallest value of $(a + b)$.
-
-
- 4** Write each of the following in exponential form such that the base is a prime number ;
- a** 108
-
-
-
- b** 400
-
-
-
- 5** Simplify in the simplest form $\frac{k^5 \times k^{-3}}{k^{-1} \times k^{-2}}$, then find the numerical value when $k = 2$
-
-
-





Question 2

Answer the following

6 Find the value of each of the following :

(a) -2^4

.....

(b) $(-4)^{10}$

.....

(c) $(-4)^0$

.....

7 Find the value of :

(a) $\frac{7^8 \times 7^3 \times 7}{7^{10}}$

.....

.....

(a) $\frac{(-2)^7 \times 3^6}{(-2)^5 \times 3^4}$

.....

.....

8 If: $4^2 + 4^2 + 4^2 + 4^2 = 2^n$ Find the value of n .

.....

.....

9 If: $n \times 5^3 = 5^7$ Find the value of n .

.....

.....

10 Write each of the following in standard form :

(a) 7.2×10^{-3}

.....

(b) 3.5×10^5

.....

(c) 1.34×10^4

.....





11 Find the missing exponent in each of the following:-

a $a^{\square} \times a^7 = a^9$

.....

b $\frac{x^{-3}}{x^{\square}} = x$

.....

12 If : $356 \times 10^{-9} = A \times 10^{-7}$, Find the value of A.

.....

13 If : $4.5 \times 10^3 = K \times 10^2$, Find the value of K.

.....

14 Write the result of each of the following in scientific notation:-

a $(3.8 \times 10^5) + (4.6 \times 10^6)$

.....

b $(5.3 \times 10^8) - (0.8 \times 10^7)$

.....

15 Write the result of each of the following in scientific notation:-

a $(4.4 \times 10^3) \times (2 \times 10^5)$

.....

b $(2^5 \times 0.001) \div (2^4 \times 10^{-2})$

.....





16 Find the solution set in Z :

a $6x^2 - 2 = 4x^2 + 6$

.....

.....

b $2x^2 + 1 = 33$

.....

.....

17 The total surface area of a cube is 294 sq cm . Find the length of its edge .

.....

.....

.....

18 A square has an area of 0.25 sq cm . Find its perimeter .

.....

.....

.....

19 If $B \in \overline{AC}, (AB)^2 = 144$ and $(BC)^2 = 625$, then find the length of $\overline{AC}$.

.....

.....

.....

20 Find the value of each of the following :

a $\sqrt{\frac{49}{100}}$

b $\sqrt[3]{\frac{-64}{27}}$





21 Write the following in the simplest form :

a $\left(\frac{3}{2}\right)^2 + \sqrt[3]{\frac{125}{64}} + \sqrt{\frac{25}{4}}$

.....

.....

b $\left(\frac{7}{8}\right)^0 + \sqrt[3]{\frac{64}{125}} - \sqrt{\frac{9}{25}}$

.....

.....

22 A cube has a volume of 3,375 cubic cm . Find its total surface area and its lateral area .

.....

.....

.....

23 Find the solution set of the following equation in Q:-

a $27x^3 + 4 = 31$

.....

.....

b $x^2 - 2 = 47$

.....

.....

24 Write each of the following in scientific notation :

a -72.1×10^{-3}

.....

b 12 million

.....

c 0.4×10^{-10}

.....



Question 1

Choose the correct answer

- 1 If $A > B$ and $C < 0$, then $A \times C$ $B \times C$
 (a) $>$ (b) $<$ (c) $\geq$ (d) $\leq$
- 2 Which of the following inequalities has $X = -7$ as one of its solutions in Z ?
 (a) $X < -7$ (b) $X > -7$ (c) $X > -6$ (d) $-X \geq -7$
- 3 What is the inequality that expresses that the twice the number X is more than 5.
 (a) $X - 2 < 5$ (b) $X + 2 > 5$ (c) $2X < 5$ (d) $2X > 5$
- 4 If $-x < 5$, then which of the following is correct?
 (a) $x > 5$ (b) $x > -5$ (c) $x < 5$ (d) $x < -5$
- 5 If $x > 3$, then $2x + 1 > \dots\dots\dots$
 (a) 3 (b) 6 (c) 5 (d) 7
- 6 If $x + 1 > 4$, which of the following cannot be a value of X ?
 (a) 7 (b) 4 (c) 5 (d) 3
- 7 $(2X)(3X) = \dots\dots\dots$
 (a) $5X$ (b) $6X$ (c) $5X^2$ (d) $6X^2$
- 8 $X(X - 1) + X = \dots\dots\dots$
 (a) $X(2X - 1)$ (b) X^2 (c) $2X^2$ (d) $X^2 - X$
- 9 If the edge length of a cube is $2b$, then its volume =
 (a) $4b^2$ (b) $2b^3$ (c) $4b^3$ (d) $8b^3$
- 10 $(3a^4b)(5a^2b^2)(2a^3) = \dots\dots\dots$
 (a) $60a^{11}b^3$ (b) $30a^{10}b^2$ (c) $15a^{10}b^3$ (d) $30a^9b^3$





- 11** If $a + 3b = 7$, $c = 3$, then the value of the expression: $a + 3(b + c) = \dots\dots\dots$
- (a) 10 (b) 16 (c) 15 (d) 13
- 12** If $(x - 6)(x + 2) = x^2 - mx - 12$, what is the value of m ?
- (a) 6 (b) 12 (c) 4 (d) -4
- 13** $(X - 3)(X + 4) = \dots\dots\dots$
- (a) $x^2 + x + 12$ (b) $x^2 - x - 12$ (c) $x^2 - 12$ (d) $x^2 + x - 12$
- 14** If $(X - 5)(X + 2) = X^2 + bX + c$, then the value of c is $\dots\dots\dots$
- (a) -10 (b) -7 (c) 7 (d) 10
- 15** $(X + \dots\dots\dots)(X + 2) = X^2 + 7X + 10$
- (a) 4 (b) 7 (c) 5 (d) 3
- 16** $(x - 5)^2 + 10x = \dots\dots\dots$
- (a) x^2 (b) -25 (c) $x^2 - 25$ (d) $x^2 + 25$
- 17** If $X + y = 15$, $X - y = 5$, then the value of $X^2 - y^2$ is $\dots\dots\dots$
- (a) 75 (b) 20 (c) 10 (d) 3
- 18** If $(x - 3)(x + 3) = x^2 - k$, then $k = \dots\dots\dots$
- (a) 6 (b) -6 (c) 9 (d) -9
- 19** If $\frac{3}{x} = \frac{x}{12}$, then $(x) = \dots\dots\dots$
- (a) 6 (b) 36 (c) 15 (d) ± 6
- 20** If $(-x - 3)^2 = x^2 + bx + 9$, then $b = \dots\dots\dots$
- (a) 6 (b) -6 (c) 3 (d) -3





21 The coefficient of ab in the expression : $(4a - 5b)^2$ is

- (a) 40 (b) 20 (c) -40 (d) -20

22 $x^2 + y^2 = 18$, and $(x + y)^2 = 30$, then , $xy = \dots\dots\dots$

- (a) 48 (b) 12 (c) 24 (d) 6

23 $24x^3 \div (-6x^2) = \dots\dots\dots$

- (a) -4 (b) $-4x$ (c) $-4x^5$ (d) $-4x^2$

24 If $(4x^2 + kxy) \div (4x) = x - 2y$, then the value of $|k|$ is

- (a) 2 (b) -8 (c) 6 (d) 8

25 $\frac{3x^2 - 6x}{3x} = \dots\dots\dots$

- (a) $-x$ (b) $-x^2$ (c) $x^2 - 2x$ (d) $x - 2$

26 $\dots\dots\dots \div (-2x^2y) = 12xy^2$

- (a) $6xy$ (b) $-6xy$ (c) $24x^3y^3$ (d) $-24x^3y^3$

27 If $\frac{2x+a}{x+3} = 2$, the value of $a = \dots\dots\dots$

- (a) 2 (b) 3 (c) 5 (d) 6

28 If the quotient of $(x^3 - 4x) \div (x - 2)$ is $(ax + x^2)$, then the value of $a = \dots\dots\dots$

- (a) -4 (b) -2 (c) 2 (d) 4

29 If the quotient of $(x^2 - 2x - 35) \div (x + 5)$ is $(x + b)$, then the value of b is

- (a) -7 (b) -5 (c) 5 (d) 7

30 What is the value of m that make the expression $(x^2 - 5x + m)$ can be divided by $(x - 2)$?

- (a) 6 (b) 2 (c) 5 (d) 1





Question 2

Answer the following

- 1** Asmaa wanted to buy one pair of shoes and some bags. If Asmaa has 2000 L.E and the price of the shoes is 350 pounds and the price of a bag is 300 L.E , what is the greatest number of bags that Asmaa can buy?

.....

.....

- 2** Find the solution set in Z and Q:

a $3(X+2) \geq -2(X+1)$

.....

.....

.....

b $2 - 3(X - 5) \geq X + 7$

.....

.....

.....

- 3** Find the solution set in N:

a $X + 2 > -1$

.....

b $2X + 5 \leq 11$

.....

.....

- 4** The sides length of a tringle are 6 cm , 8 cm and $(2X - 4)$ cm , What are the possible integer values of X ?

.....

.....

.....





5 Express each of the following with an inequality :-

a You must be at least 18 years old to obtain a driving license.

.....

b The maximum speed of your car is 80 km/h.

.....

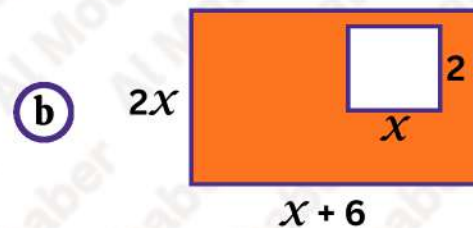
c You must purchase at least 200 L.E to get the discount.

.....

6 Find the expression that represents the area of the following in the simplest form:



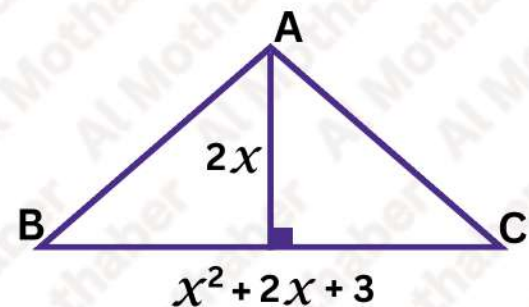
.....



.....

7 Find the area of the opposite triangle ABC in terms of x then calculate the value of its area when $x = 3$

.....





- 8** Simplify to the simplest form : $2a(3a - 1) + 3a(a + 2)$, then find the value when $a = 2$

.....

.....

- 9** Find the result of each of the following:-

a $2x(4x^2 - xy + 5)$

.....

b $3x(3x^2 + 3xy - 2)$

.....

- 10** Simplify each of the following:-

a $2x(3x - 1) + 3x(x + 2)$

.....

b $4x(3x^2 + 2x + 7) - 8x^2$

.....

- 11** If $(x + 8)(x + 2) = 100$, then
find the value of : $(x + 4)(x + 6)$

.....

.....

.....

.....

- 12** If the area of a rectangle is $(4x^4 + 8x^3 + 12x^2)$ square unit. and one of its dimensions $4x^2$ unit length. Find the other dimension at term x

.....

.....





- 13** A cuboid with a volume of $(12x^2y + 20xy^2)$ cubic units and its base area of $4xy$ square units . Find its height in terms of x and y .

.....

.....

.....

.....

- 14** Find the product:-

a $(3b + 2)(3b - 2)$

.....

c $(2x + 3)^2$

.....

b $(x - 5)^2$

.....

d $(X-7)(2X -1)$

.....

- 15** A rectangle with a length of $(2X + 5)$ length units and its length exceeds its width by 4 length units, find its surface area in terms of x , then find the numerical value of the area when $x = 3$

.....

.....

.....

.....

- 16** Find the S.S for the following in Z $x(x - 2) + 2(x - 2) = 0$

.....

.....

.....





- 17** If the expression $(x^3 - x^2 - 4x + -m)$ is divisible by $(x - 3)$ find the value of m .

.....

.....

.....

.....

.....

- 18** Find the quotient :

a $\frac{15 a^3 b^2 c}{3 a^2 b^2 c}$

b $(- 32 a^3 b^6) \div (- 4 a^3 b^2)$

.....

.....

.....

.....

- 19** Divide $(- 3x^2 + x^3 - x + 6)$ by $(x - 2)$, then find the numerical value of the quotient when $x = 3$

.....

.....

.....

.....

.....

- 20** Find the quotient : $x^4 + 3x^2 + 2$ divided by $x^2 + 1$

.....

.....

.....

.....

.....





Question 1

Choose the correct answer

- 1 If the area of a rhombus is 100 square units ,then the product of the lengths of its diagonals is
- (a) 25 (b) 50 (c) 100 (d) 200
- 2 A rhombus of perimeter 40cm and height 8 cm . What is its area?
- (a) 15 cm^2 (b) 60 cm^2 (c) 30 cm^2 (d) 80 cm^2
- 3 If a rhombus has diagonals of lengths 8 cm and 10 cm, what is its area?
- (a) 80 cm^2 (b) 40 cm^2 (c) 18 cm^2 (d) 20 cm^2
- 4 The area of a square with a side length of 6 cm the area of a square with a diagonal length of 8 cm.
- (a) $>$ (b) $<$ (c) $=$ (d) $\geq$
- 5 A trapezium the lengths of its two parallel bases are 15 cm and 11 cm. then the length of its middle base is cm.
- (a) 26 (b) 15 (c) 13 (d) 11
- 6 A trapezium has an area of 450 square inches and the length of its parallel bases are 24 and 12 inches ,then its height = inches.
- (a) 12.5 (b) 25 (c) 36 (d) 52
- 7 If the area of a square is 450 square units , then the length of its diagonal = length units
- (a) 15 (b) 30 (c) 45 (d) 90
- 8 A square of perimeter 16 cm ,then its area =
- (a) 10 cm^2 (b) 8 cm^2 (c) 16 cm^2 (d) 30 cm^2





Question 2

Answer the following

- 1** A rhombus of side length 15 cm and the lengths of its diagonals are 18 cm and 24 cm find its height.

.....

.....

.....

- 2** Which has a greater area? A square with a diagonal length of 12 cm or a rectangle with a length of 11 cm and a width of 7 cm.

.....

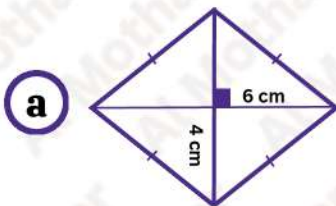
.....

- 3** A trapezium has an area of 54 cm^2 and a height of 9 cm. If the length of its shorter base is 4 cm, find the length of its longer base.

.....

.....

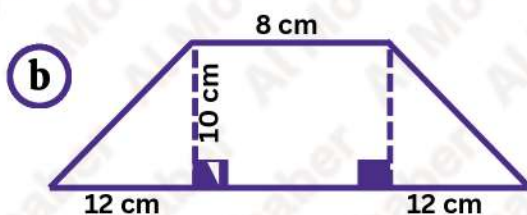
- 4** Find the area of each of the following:



.....

.....

.....



.....

.....

.....





- 5** A trapezium has an area of 54 cm^2 and a height of 9 cm. If the length of its shorter base is 4 cm, find the length of its longer base.

.....

.....

- 6** A trapezium has an area of 315 cm^2 , a height of 15 cm, and the ratio between the lengths of its bases is 3 : 4
What is the length of each base?

.....

.....

.....

- 7** Find the length of the diagonal of the square whose area is equal to the area of a rhombus with diagonal lengths of 4 m and 25 m.

.....

.....

- 8** Find the area of each of the following:

- a** A square with a diagonal length of 10 meters.

.....

.....

- b** A trapezium with parallel bases of length 6 cm and 8 cm and a height 12 cm.

.....

.....



حمل الآن

مجانا وحصريا

المراجعة رقم (6)

اختبار شهر مارس



Model (1)
Question 1 : Choose the correct answer :

- 1 The third of the number 3^5 is
 (a) 3^2 (b) 3^3 (c) 3^4 (d) 3^5
- 2 $(a^4 + a^3) \div a^2 = \dots$
 (a) $a^6 + a^5$ (b) $a^8 + a^6$ (c) $a^3 + a^2$ (d) $a^2 + a$
- 3 If a and b are the square root of the number 4 , what is the value of $b + a$?
 (a) $2a$ (b) $2b$ (c) 1 (d) 0
- 4 $\sqrt[3]{x^9} = \sqrt{\quad}$
 (a) x^6 (b) x^8 (c) x^3 (d) x^4
- 5 $(2x^3y^2)(-xy^4)$
 (a) x^4y^6 (b) $2x^4y^6$ (c) $3x^4y$ (d) $-2x^4y^6$
- 6 $(16x + 4) \div 4$
 (a) $4x$ (b) $4x + 1$ (c) $3a + 1$ (d) $4a + 8$
- 7 The s.s for $-5n > 0$ is
 (a) Q (b) Q_+ (c) Q_- (d) Z
- 8 $\frac{125x^3y^3}{\dots} = 5xy^2$
 (a) $25x^2$ (b) $5x^2$ (c) x^3y^2 (d) $25x^2y$
- 9 Which of the following equal $\frac{3}{x}$?
 (a) x^{-3} (b) $3x$ (c) $3x^{-1}$ (d) $\frac{1}{3}x$

Question 2 : Answer the following questions :

- 1 A trapezium with an area of 560 square feet and a height of 20 feet . if the length of one of its parallel , bases is 44 feet , then find the length of its other base .
- 2 Simplify to its simplest form : $\left(\frac{1}{2}\right)^0 - \sqrt[3]{\frac{-125}{343}} - \sqrt{2\frac{7}{9}}$
- 3 $(0.2 \times 10^8) - (3.2 \times 10^9)$

- 8 $57000 = 5.7 \times 10^m$, then $m = \dots$
- (a) 4 (b) 5 (c) -4 (d) -5
- 9 $4y^{-4} = \dots$
- (a) $4y^2$ (b) $\frac{4}{y^2}$ (c) $\frac{1}{4}y^4$ (d) $\frac{4}{y^4}$

Question 2 : Answer the following questions :

- 1 Find the s.s of the inequality : $3x - 2 \leq 4$ in $\mathbb{N}$
- 2 Find in $\mathbb{Q}$ the s.s of $x^2 - 3 = 6$?
- 3 A trapezium with a middle base length of 8cm , a height 12cm , find its area ?
- 4 Find the quotient of : $8x^3 - 20x^2 - 10 + 4x$ divided by $4x^2 + 2$
- 5 If $(40x^2y^4 - 36x) \div (4x) = n \times y^4 + 9$, what is the value of n ?
- 6 A square with a side length of $(x - 4)$ length units , find its surface area in terms of x , then find the value of the area , when $x = -5$
- 7 Find the value : $\frac{(7)^0 \times (7)^{-2}}{(7)^{-3} \times (7)^{-4}}$

Model (3)

Question 1 : Choose the correct answer:

- 1 $10 = 1 \times 10^{\dots}$
- (a) 0 (b) 1 (c) 3 (d) 2
- 2 The half of number 2^4 is ..
- (a) 2^3 (b) 2^8 (c) 2^4 (d) 2^5

- 3 If $-\sqrt{16} = \sqrt[3]{y}$, then what is the value of y ?
 (a) 64 (b) -4 (c) 16 (d) -64
- 4 If $x + y = 4$ and $x - y = 8$, then what is the value of $x^2 - y^2$?
 (a) 2 (b) 32 (c) 4 (d) 36
- 5 $7.52 \times 10^{12} = k \times 10^{-11}$, what is the value of k ?
 (a) 75.2 (b) 7.52 (c) 0.752 (d) 0.0752
- 6 Which of the following equals 5^{-3}
 (a) $\frac{1}{5}$ (b) 125 (c) $\frac{1}{125}$ (d) 25
- 7 $15x^3y^2 \div \dots = 3xy$
 (a) 5y (b) $5x^2y$ (c) 5xy (d) x^2y
- 8 Which the s.s of this inequality $2x + 2 < 4$? in z
 (a) 1 (b) zero (c) 2 (d) 4
- 9 If $3^2xa = 3^5$, what is the value of a ?
 (a) 3^4 (b) 3^3 (c) 3^6 (d) 3^{10}

Question 2 : Answer the following questions :

- 1 A cube of volume 125 cm^3 , find its total area ?
- 2 Find in the simplest form : $\frac{3^8 \times 3^3}{3^4 \times 3^5}$
- 3 Find the quotient of dividing $(x^3 + x + 10)by(x + 2)$
- 4 Simplify : $\sqrt{\frac{36}{25}} \times \sqrt[3]{\frac{125}{216}} x \left(\frac{4}{5}\right)^0$?
- 5 Find the solution set in z for the inequality
 $4(x - 3) > 8$

- 6 Find the result $(6.5 \times 10^4)(8 \times 10^2)$
- 7 A square with a diagonal length 8 cm find its area ?

Model (4)

Question 1 : Choose the correct answer :

- 1 ... $\div (8ab) = 4ab$
- (a) 2 (b) $12ab$ (c) $2a^2b^2$ (d) $32a^2b^2$
- 2 If $-\sqrt{9} = \sqrt[3]{x}$, then what is the value of x ?
- (a) 3 (b) -3 (c) -9 (d) -27
- 3 Which of the following is the multiplicative inverse of the number 5^{-2} ?
- (a) $-\frac{1}{25}$ (b) -25 (c) $\frac{1}{25}$ (d) 25
- 4 If $3^m = 81$, then what is the value of m ?
- (a) 4 (b) 27 (c) -4 (d) 2
- 5 If the number 250000 in scientific notation equals 2.5×10^m , then m = ...
- (a) -4 (b) -5 (c) 4 (d) 5
- 6 What is the inequality that express that the number x is greater than 6 ?
- (a) $x \leq 6$ (b) $x \geq 6$ (c) $x > 6$ (d) $x < 6$
- 7 If $(x - 2)$ is one of the factors of the expression : $3x^2 - 7x + 2$, then the other factor is
- (a) $3x + 1$ (b) $3x + 2$ (c) $x + 1$ (d) $3x - 1$
- 8 A square with a diagonal length of 12 feet has an area ofsquare feet .
- (a) 36 (b) 72 (c) 144 (d) 180
- 9 If $-x < 3$, then which of the following is true ?
- (a) $x \leq 3$ (b) $x > -3$ (c) $x < 3$ (d) $x < -3$

Question 2 : Answer the following questions :

- ① A trapezium with an area of 280 square feet and a height of 10 feet. If the length of one of its parallel bases is 22 feet , then find the length of its other base
- ② Find the solution set for the following equation in z :
 $3x^2 - 2 = 10$
- ③ Simplify to the simplest form : $\frac{x^{-3} \times x^5 \times (-x)^4}{x^2 \times x^{-4} \times x^6}$, then find the numerical value when $x = 2$
- ④ Find the solution set for the following inequality in Q ?
 $2(x + 1) \leq 5(x - 4)$
- ⑤ Simplify to the simplest form : $\sqrt{\frac{4}{25}} + \left(\frac{-3}{2}\right)^0 + \sqrt[3]{\frac{27}{125}}$
- ⑥ If the expression $(x^2 + x - m)$ is divided by $(x + 4)$, then find the value of m ?
- ⑦ The total (surface)area of a cube is 1.350 square centimeters find its edge lengths

Model (5)

Question 1 : Choose the correct answer :

- ① If $x - 2 < 5$, then which of the following could be the value of x ?
 (a) 6 (b) 7 (c) 8 (d) 9
- ② A cube has a volume of x^6 , then what is the length of it's the edge ?
 (a) x (b) x^2 (c) x^3 (d) $6x^3$

- 3 The multiplicative inverse of $(-3)^2$ is
- (a) 3^2 (b) -3^2 (c) $\frac{1}{9}$ (d) $(-2)^3$
- 4 If $m = 2n$, then $(4)^{m-2n} \dots$
- (a) $m - 2n$ (b) 4 (c) 1 (d) 0
- 5 What is the quotient of $(x^2 - 10x + 25)$ divided by $(x - 5)$?
- (a) $x + 5$ (b) $x - 5$ (c) $x + 10$ (d) $x - 10$
- 6 $(-3a^2b)(2ab)(-6a) = \dots$
- (a) $-36a^4b^2$ (b) $36a^4b^2$ (c) $-7a^3b^2$ (d) $36a^4b^2c$
- 7 A trapezium with a height of 5cm and the lengths of its middle base is 9cm ,
What is the area ?
- (a) 45 (b) 225 (c) 50 (d) 14
- 8 Which of the following inequalities has one of its solutions is $x = -3$ in Q ?
- (a) $-x > 3$ (b) $x \geq 2$ (c) $x > -3$ (d) $-x > -3$
- 9 If a and b are the square roots of the number c , then what is the value of $a + b$?
- (a) $2a$ (b) $2b$ (c) 1 (d) zero

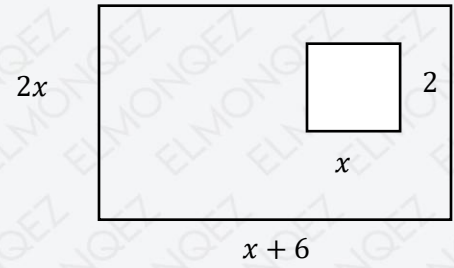
Question 2 : Answer the following questions :

- 1 If $(2x + 3)$ is a factor of expression $(2x^2 - 15 - 7x)$, then find the other factor
- 2 Find the length of the diagonal of the square whose area equal to the area of rhombus with diagonal length of 4 meters and 16 meters
- 3 Simplify to its simplest form : $(x - y)^2 - x^2$, then find the numerical value of the result when $x = -1$ and $y = 2$
- 4 Find the quotient : $\frac{3ab^2 + 9a^2b - 6a^2b^2}{3ab}$?

5 Write the result of the following in scientific notation :
 $(2.14 \times 10^5) + (5.4 \times 10^4)$

6 A square with a side length of $(x + 4)$ length units .
 Calculate its surface area in terms of x

7 Find in the simplest form the algebraic expression that represents
 the area of the shaded part



Model (1)

Question 1 : Choose the correct answer :

- 1 The third of the number 3^5 is
 (a) 3^2 (b) 3^3 (c) 3^4 (d) 3^5
- 2 $(a^4 + a^3) \div a^2 = \dots$
 (a) $a^6 + a^5$ (b) $a^8 + a^6$ (c) $a^3 + a^2$ (d) $a^2 + a$
- 3 If a and b are the square root of the number 4 , what is the value of $b + a$?
 (a) $2a$ (b) $2b$ (c) 1 (d) 0
- 4 $\sqrt[3]{x^9} = \sqrt{\quad}$
 (a) x^6 (b) x^8 (c) x^3 (d) x^4
- 5 $(2x^3y^2)(-xy^4)$
 (a) x^4y^6 (b) $2x^4y^6$ (c) $3x^4y$ (d) $-2x^4y^6$
- 6 $(16x + 4) \div 4$
 (a) $4x$ (b) $4x + 1$ (c) $3a + 1$ (d) $4a + 8$
- 7 The s.s for $-5n > 0$ is
 (a) Q (b) Q_+ (c) Q_- (d) Z
- 8 $\frac{125x^3y^3}{\dots} = 5xy^2$
 (a) $25x^2$ (b) $5x^2$ (c) x^3y^2 (d) $25x^2y$
- 9 Which of the following equal $\frac{3}{x}$?
 (a) x^{-3} (b) $3x$ (c) $3x^{-1}$ (d) $\frac{1}{3}x$

Question 2 : Answer the following questions :

- 1 A trapezium with an area of 560 square feet and a height of 20 feet . if the length of one of its parallel , bases is 44 feet , then find the length of its other base .

$$A = \frac{a + b}{2} h$$

$$560 = \frac{44 + b}{2} \times 20$$

$$\begin{aligned} 1120 &= 880 + 20b \\ 240 &= 20b \\ b &= 12 \text{ Feet} \end{aligned}$$

2 Simplify to its simplest form : $\left(\frac{1}{2}\right)^0 - \sqrt[3]{\frac{-125}{343}} - \sqrt{2\frac{7}{9}}$

$$1 - \left(\frac{-5}{7}\right) - \frac{5}{3} =$$

3 $(0.2 \times 10^8) - (3.2 \times 10^9)$

$$\begin{aligned} &= (0.2 \times 10^8) - (32 \times 10^8) \\ &= (0.2 - 32) \times 10^8 \\ &= -31.8 \times 10^8 \\ &= -3.18 \times 10^9 \end{aligned}$$

4 If $x = -3$, $y = 2$ find the numerical value of each of the following :

1) x^y

2) $(-y)^3$

3) $(x + y)^2$

1) $(-3)^2 = 9$

2) $(-2)^3 = -8$

3) $(-3 + 2)^2 = 1$

5 Simplify to the simplest form : $\frac{a^{-3} \times a^{-2} \times a}{a^2}$

$$a^{-3+2+1-2} = a^{-2} = \frac{1}{a^2}$$

6 Find the product : $(4x + 1)(2x + 3)$

$$\begin{aligned} &(4x)(2x) + (4x)(3) + (1)(2x) + (1)(3) \\ &8x^2 + 12x + 2x + 3 \\ &8x^2 + 14x + 3 \end{aligned}$$

7 $15x^2y^3 \div \dots = 3xy$

$$\frac{15x^2y^3}{3xy^2} = 5xy$$

Model (2)

Question 1 : Choose the correct answer :

- 1 If $m \in n$, then s.s for $3m < 9$ is
 (a) $\{3\}$ (b) $\{1,2,3\}$ (c) $\{\dots,0,1,2\}$ (d) $\{0,1,2\}$
- 2 $x(x - 4) - x = \dots$
 (a) $x^2 - 4 + x$ (b) $x - 4$ (c) $x^2 - 5x$ (d) $x^2 - 4x$
- 3 What is the algebraic expression that ,
 represents the area of the opposite square ?

 (a) $4x$ (b) $8x$ (c) $8x^2$ (d) $16x^2$
- 4 The multiplicative inverse of $\sqrt[3]{\frac{125}{-8}}$ is
 (a) $\frac{5}{2}$ (b) $\frac{2}{5}$ (c) $-\frac{2}{5}$ (d) $-\frac{5}{2}$
- 5 If $a(8x + 4) = 16x^2 - 8x$, then what is the value of a ?
 (a) $2x$ (b) $2x^2$ (c) $4x$ (d) $4x^2$
- 6 A cube with a volume of 729 cubic units , what is the length of its edge ?
 (a) 9 (b) 10 (c) 14 (d) 12
- 7 A rhombus of diagonal length , 4cm, 5cm then its area = ...
 (a) 20 (b) 10 (c) 40 (d) 9
- 8 $57000 = 5.7 \times 10^m$, then m =...
 (a) 4 (b) 5 (c) -4 (d) -5
- 9 $4y^{-4} = \dots$
 (a) $4y^2$ (b) $\frac{4}{y^2}$ (c) $\frac{1}{4}y^4$ (d) $\frac{4}{y^4}$

Question 2 : Answer the following questions :

- 1 Find the s.s of the inequality : $3x - 2 \leq 4$ in N

$$3x \leq 4 + 2$$

$$3x \leq 6$$

$$x \leq 2$$

$$s.s = \{2, 3, 4, 5, \dots\}$$

- 2 Find in Q the s.s of $x^2 - 3 = 6$?

$$\begin{aligned}x^2 &= 6 + 3 \\x^2 &= 9 \\x &= \sqrt{9} = \pm 3 \\s.s &= \{\pm 3\}\end{aligned}$$

- 3 A trapezium with a middle base length of 8cm , a height 12cm , find its area ?

The area = length of middle base X h

$$8 \times 12 = 96cm^2$$

- 4 Find the quotient of : $8x^3 - 20x^2 - 10 + 4x$ divided by $4x^2 + 2$

$$\begin{array}{r}2x - 5 \\4x^2 + 2 \overline{) 8x^3 - 20x^2 - 10 + 4x} \\ \underline{-8x^3} -4x \\ -20x^2 - 10 \\ \underline{-20x^2 - 10} \\ 00\end{array}$$

- 5 If $(40x^2y^4 - 36x) \div (4x) = n \times y^4 + 9$, what is the value of n ?

$$\begin{aligned}(40x^2y^4 - 36x) &\div (-4x) \\(-10xy^4 + 9) &= nxy^4 + 9 \\n &= -10\end{aligned}$$

- 6 A square with a side length of $(x - 4)$ length units , find its surface area in terms of x , then find the value of the area , when $x = -5$

$$\begin{aligned}area &= (x - 4)(x - 4) \\x^2 - 4x - 4x + 16 \\x^2 - 8x + 16 &, \text{ when } x = -5 \\(-5)^2 - 8(-5) + 16 &= 81 \text{ square unit}\end{aligned}$$

- 7 Find the value : $\frac{(7)^0 \times (7)^{-2}}{(7)^{-3} \times (7)^{-4}}$

$$(7)^{0-2+3+4} = 7^5 = 16,807$$

Model (3)

Question 1 : Choose the correct answer:

- 1 $10 = 1 \times 10^{\dots}$
 - (a) 0
 - (b) 1
 - (c) 3
 - (d) 2
- 2 The half of number 2^4 is ..
 - (a) 2^3
 - (b) 2^8
 - (c) 2^4
 - (d) 2^5
- 3 If $-\sqrt{16} = \sqrt[3]{y}$, then what is the value of y ?
 - (a) 64
 - (b) -4
 - (c) 16
 - (d) -64
- 4 If $x + y = 4$ and $x - y = 8$, then what is the value of $x^2 - y^2$?
 - (a) 2
 - (b) 32
 - (c) 4
 - (d) 36
- 5 $7.52 \times 10^{12} = k \times 10^{-11}$, what is the value of k ?
 - (a) 75.2
 - (b) 7.52
 - (c) 0.752
 - (d) 0.0752
- 6 Which of the following equals 5^{-3}
 - (a) $\frac{1}{5}$
 - (b) 125
 - (c) $\frac{1}{125}$
 - (d) 25
- 7 $15x^3y^2 \div \dots = 3xy$
 - (a) 5y
 - (b) $5x^2y$
 - (c) 5xy
 - (d) x^2y
- 8 Which the s.s of this inequality $2x + 2 < 4$? in z
 - (a) 1
 - (b) zero
 - (c) 2
 - (d) 4
- 9 If $3^2xa = 3^5$, what is the value of a ?
 - (a) 3^4
 - (b) 3^3
 - (c) 3^6
 - (d) 3^{10}

Question 2 : Answer the following questions :

- 1 A cube of volume 125 cm^3 , find its total area ?

$$v = a^3 \quad a = \sqrt[3]{125} = 5 \text{ cm}$$

$$\text{area} = 6a^2 = 6 \times (5)^2 = 150 \text{ cm}^2$$

2

Find in the simplest form : $\frac{3^8 \times 3^3}{3^4 \times 3^5}$

$$3^{8+3-4-5} = 3^2 = 9$$

3

Find the quotient of dividing $(x^3 + x + 10)$ by $(x + 2)$

$$x^2 - 2x + 5$$

$$\begin{array}{r} x^2 - 2x + 5 \\ x + 2 \overline{) x^3 + x + 10} \\ \underline{-x^3 - 2x^2} \\ 2x^2 + x + 10 \\ \underline{-2x^2 + 4x + 10} \\ 5x + 10 \end{array}$$

4

Simplify : $\sqrt{\frac{36}{25}} \times \sqrt[3]{\frac{125}{216}} x \left(\frac{4}{5}\right)^0$?

$$\frac{6}{5} x \frac{5}{6} \times 1 = 1$$

5

Find the solution set in z for the inequality

$$4(x - 3) > 8$$

$$\begin{aligned} 4(x - 3) &> 8 \\ 4x - 12 &> 8 \\ 4x &> 8 + 12 \\ 4x &> 20 \\ x &> 5 \end{aligned}$$

6

Find the result $(6.5 \times 10^4)(8 \times 10^2)$

$$\begin{aligned} (6.5 \times 8)(10^4 \times 10^2) \\ = 52 \times 10^6 \end{aligned}$$

7

A square with a diagonal length 8 cm find its area ?

$$\begin{aligned} A &= \frac{1}{2} d^2 \\ A &= \frac{1}{2} (8)^2 = 32 \text{ cm}^2 \end{aligned}$$

Model (4)

Question 1 : Choose the correct answer :

1. $\dots \div (8ab) = 4ab$
 - (a) 2
 - (b) $12ab$
 - (c) $2a^2b^2$
 - (d) $32a^2b^2$
2. If $-\sqrt{9} = \sqrt[3]{x}$, then what is the value of x ?
 - (a) 3
 - (b) -3
 - (c) -9
 - (d) -27
3. Which of the following is the multiplicative inverse of the number 5^{-2} ?
 - (a) $-\frac{1}{25}$
 - (b) -25
 - (c) $\frac{1}{25}$
 - (d) 25
4. If $3^m = 81$, then what is the value of m ?
 - (a) 4
 - (b) 27
 - (c) -4
 - (d) 2
5. If the number 250000 in scientific notation equals 2.5×10^m , then m = ...
 - (a) -4
 - (b) -5
 - (c) 4
 - (d) 5
6. What is the inequality that express that the number x is greater than 6 ?
 - (a) $x \leq 6$
 - (b) $x \geq 6$
 - (c) $x > 6$
 - (d) $x < 6$
7. If $(x - 2)$ is one of the factors of the expression : $3x^2 - 7x + 2$, then the other factor is
 - (a) $3x + 1$
 - (b) $3x + 2$
 - (c) $x + 1$
 - (d) $3x - 1$
8. A square with a diagonal length of 12 feet has an area ofsquare feet .
 - (a) 36
 - (b) 72
 - (c) 144
 - (d) 180
9. If $-x < 3$, then which of the following is true ?
 - (a) $x \leq 3$
 - (b) $x > -3$
 - (c) $x < 3$
 - (d) $x < -3$

Question 2 : Answer the following questions :

1. A trapezium with an area of 280 square feet and a height of 10 feet. If the length of one of its parallel bases is 22 feet , then find the length of its other base

$$A = \frac{1}{2}(b_1 + b_2) \times h$$

$$280 = \frac{1}{2}(b_1 + 22) \times 10$$

$$b_1 + 22 = \frac{280}{5} = 56$$

$$b_1 = 56 - 22 = 34$$

The length of the other base = 34 feet .

2

Find the solution set for the following equation in z :

$$3x^2 - 2 = 10$$

$$3x^2 - 2 = 10$$

$$3x^2 = 10 + 2 = 12$$

$$x^2 = \frac{12}{3} = 4$$

$$x = \sqrt{4} = \pm 2$$

the solution set = {2, -2}

3

Simplify to the simplest form : $\frac{x^{-3} \times x^5 \times (-x)^4}{x^2 \times x^{-4} \times x^6}$, then find the numerical value when

$$x = 2$$

$$\frac{x^{-3} \times x^5 \times (-x)^4}{x^2 \times x^{-4} \times x^6} = \frac{x^4 \times x^5 \times x^4}{x^3 \times x^2 \times x^6}$$

$$\frac{x^{4+5+4}}{x^{3+2+6}} = \frac{x^{13}}{x^{11}} = x^{13-11} = x^2$$

$$\text{The numerical value} = (2)^2 = 4$$

4

Find the solution set for the following inequality in Q ?

$$2(x + 1) \leq 5(x - 4)$$

$$2x + 2 \leq 5x - 20$$

$$2x - 5x \leq -20 - 2$$

$$-3x \leq -22$$

$$x \geq \frac{-22}{-3}$$

$$x \geq \frac{22}{3}$$

the solution set = $\left\{x : x \in Q, x \geq \frac{22}{3}\right\}$

5 Simplify to the simplest form : $\sqrt{\frac{4}{25}} + \left(\frac{-3}{2}\right)^0 + \sqrt[3]{\frac{27}{125}}$

$$\frac{2}{5} + 1 + \frac{3}{5}$$

$$\frac{2}{5} + \frac{5}{5} + \frac{3}{5} = \frac{2+5+3}{5}$$

$$\frac{10}{5} = 2$$

6 If the expression $(x^2 + x - m)$ is divided by $(x + 4)$, then find the value of m ?

$$\begin{array}{r} x-3 \\ x+4 \overline{) x^2+x-m} \\ \underline{-x^2+4x} \\ -3x-m \\ \underline{-3x-12} \\ -m+12 \end{array}$$

$\therefore -m + 12 = 0$
 $\therefore m = 12$

7 The total (surface)area of a cube is 1.350 square centimeters find its edge lengths

Let the edge length = S
 The total surface area of cube
 $6s^2 = 1.350$
 $s^2 = \frac{1.350}{6} = 225$
 $S = \sqrt{225} = 15$
 The edge length of the cube = 15 cm

Model (5)

Question 1 : Choose the correct answer :

- 1 If $x - 2 < 5$, then which of the following could be the value of x ?
 (a) 6 (b) 7 (c) 8 (d) 9
- 2 A cube has a volume of x^6 , then what is the length of it's the edge ?
 (a) x (b) x^2 (c) x^3 (d) $6x^3$
- 3 The multiplicative inverse of $(-3)^2$ is
 (a) 3^2 (b) -3^2 (c) $\frac{1}{9}$ (d) $(-2)^3$

- 4 If $m = 2n$, then $(4)^{m-2n} \dots$
- (a) $m - 2n$ (b) 4 (c) 1 (d) 0
- 5 What is the quotient of $(x^2 - 10x + 25)$ divided by $(x - 5)$?
- (a) $x + 5$ (b) $x - 5$ (c) $x + 10$ (d) $x - 10$
- 6 $(-3a^2b)(2ab)(-6a) = \dots$
- (a) $-36a^4b^2$ (b) $36a^4b^2$ (c) $-7a^3b^2$ (d) $36a^4b^2c$
- 7 A trapezium with a height of 5cm and the lengths of its middle base is 9cm ,
What is the area ?
- (a) 45 (b) 225 (c) 50 (d) 14
- 8 Which of the following inequalities has one of its solutions is $x = -3$ in Q ?
- (a) $-x > 3$ (b) $x \geq 2$ (c) $x > -3$ (d) $-x > -3$
- 9 If a and b are the square roots of the number c , then what is the value of $a + b$?
- (a) $2a$ (b) $2b$ (c) 1 (d) zero

Question 2 : Answer the following questions :

- 1 If $(2x + 3)$ is a factor of expression $(2x^2 - 15 - 7x)$, then find the other factor

The other factor is $(x - 5)$

$$\begin{array}{r}
 x - 5 \\
 2x + 3 \overline{) 2x^2 - 7x - 15} \\
 \underline{-2x^2 + 3x} \\
 -10x - 15 \\
 \underline{-10x - 15} \\
 0
 \end{array}$$

- 2 Find the length of the diagonal of the square whose area equal to the area of rhombus with diagonal length of 4 meters and 16 meters

$$\begin{aligned}
 \text{The area of the rhombus} &= \frac{1}{2} \times d_1 \times d_2 \\
 &= \frac{1}{2} \times 4 \times 16 = 32m^2
 \end{aligned}$$

$$\text{The area of square} = 32m^2$$

$$\text{The area of the square} = \frac{1}{2} d^2 = 32$$

$$d^2 = 32 \div \frac{1}{2} = 64$$

$$d = \sqrt{64} = 8$$

The diagonal lengths of the square = 8 m

- ③ Simplify to its simplest form : $(x - y)^2 - x^2$, then find the numerical value of the result when $x = -1$ and $y = 2$

$$\begin{aligned}(x - y)^2 - x^2 &= x^2 - 2xy + y^2 - x^2 \\ &= y^2 - 2xy\end{aligned}$$

The numerical value when $x = -1$ and $y = 2$

$$(2)^2 - 2(-1)(2) = 4 + 4 = 8$$

- ④ Find the quotient : $\frac{3ab^2 + 9a^2b - 6a^2b^2}{3ab}$?

$$\begin{aligned}\frac{3ab^2}{3ab} + \frac{9a^2b}{3ab} + \frac{6a^2b^2}{3ab} \\ = b + 3a - 2ab\end{aligned}$$

- ⑤ Write the result of the following in scientific notation : $(2.14 \times 10^5) + (5.4 \times 10^4)$

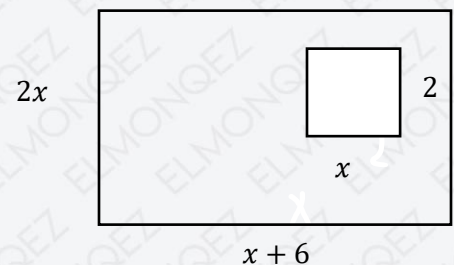
$$\begin{aligned}(2.14 \times 10^5) + (5.4 \times 10^4) \\ (2.14 + 0.54) \times 10^5 \\ = 2.68 \times 10^5\end{aligned}$$

- ⑥ A square with a side length of $(x + 4)$ length units . Calculate its surface area in terms of x

The area of the square = S^2

$$= (x + 4)^2 = x^2 + 8x + 16 \text{ square units}$$

- ⑦ Find in the simplest form the algebraic expression that represents the area of the shaded part



$$\begin{aligned}\text{the area of the shaded part} &= (2x)(x + 6) - 2x \\ &= 2x^2 + 12x - 2x \\ &= 2x^2 + 10x \text{ square units}\end{aligned}$$

حمل الآن

مجاناً وحصرياً

المراجعة رقم (7)

اختبار شهر مارس



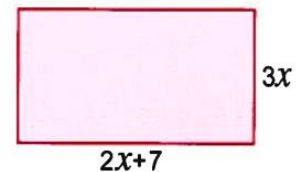
Q1) Choose the correct answer: (15 marks)

1) $\sqrt[3]{x} = 4$, what is the value of x ?

- (a) 16
- (b) 12
- (c) 24
- (d) 64

2) What is the algebraic expression that represents the area of the opposite rectangle?

- (a) $6x + 21$
- (b) $5x + 21$
- (c) $5x + 7$
- (d) $6x^2 + 21x$



3) $7x^0 + (2x^0)^0 = \dots\dots\dots$

- (a) 7
- (b) 8
- (c) $7x^2$
- (d) 9

4) $(1)^{100} + (-1)^{101} = \dots\dots\dots$

- (a) 2
- (b) 0
- (c) -1



(d) 1

5) Half of the number 2^x is

(a) 1^x

(b) $(1/2)^x$

(c) 2^{x+1}

(d) 2^{x-1}

6) Which of the following numbers is in scientific notation?

(a) 10×10^3

(b) -1.7×10^{-5}

(c) 0.7×10^{15}

(d) -0.02×10^9

7) 3.4×10^3 4.3×10^2

(a) $>$

(b) $<$

(c) $=$

8) $\sqrt{(x^{12})} = \dots\dots\dots$

(a) x^6

(b) x^9

(c) x^8



(d) x^{15}

9) If $-2x^3 \times x = a x^n$, what is the value of $a + n$?

(a) -3

(b) -2

(c) 2

(d) 3

10) If $x \in \mathbb{Z}$, which of the following is a solution to the inequality $1 - 2x < 3$?

(a) 0

(b) -1

(c) -2

(d) -4

11) If $745 \times 10^{-9} = k \times 10^{-7}$, then what is the value of k ?

(a) 74.5

(b) 7.45

(c) 0.745

(d) 0.0745

12) Which of the following equals $4^a + 4^a + 4^a + 4^a$?

(a) 4^{4a}

(b) 16^{4a}

(c) 4^{a+1}

(d) 4^{a+4}



13) If $(x - 7)(x + 7) = x^2 + a$, then what is the value of a ?

- (a) 49
- (b) -49
- (c) 14
- (d) -14

14) What is the result of dividing $(x^2 - 12x + 20)$ by $(x - 2)$?

- (a) $x - 4$
- (b) $x + 4$
- (c) $x - 10$
- (d) x

15) A square has a perimeter of 16 cm. What is its area?

- (a) 8
- (b) 30
- (c) 16
- (d) 10

Q2) Complete: (15 marks)

1) If $0.000046 = 4.6 \times 10^n$, then $n = \dots\dots\dots$

2) $\sqrt{16} - \sqrt[3]{(-27)} = \dots\dots\dots$



3) If $x^3 + 4 = 12$, then $x = \dots\dots\dots$

4) If $3^4 + 3^4 + 3^4 = 3^n$, then $n = \dots\dots\dots$

5) A trapezium with a middle base length of X cm and a height equal to half the length of its middle base. then its area = $\dots\dots\dots$

6) $-24 x^2 y^3 \div (-6 x^2) = \dots\dots\dots$

7) $-24 x^2 y^3 \times (-6 x^2) = \dots\dots\dots$

8) A trapezium of height 5.4 cm and the lengths of the two parallel bases are 8 cm and 10 cm, then its area = $\dots\dots\dots$

9) $(a^2 - a) \div (a - 1) = \dots\dots\dots$



10) The coefficient of ab in the product $(2a - 3b) \times (a - b)$ equals

11) The solution set of the inequality $2x - 1 > x + 2$ in $\mathbb{Z}$ equals

12) If $(3x - 4)^2 = ax^2 + bx + c$, then $b = \dots\dots\dots$

13) The multiplicative inverse of 3^{-2} is

14) The additive inverse of 3^3 is

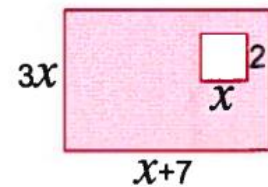
15) $(2X+3)^2 = \dots\dots\dots$



Q3) Answer The Following :(15 marks)

1) Simplify to its simplest form: $(x - y)^2 - x^2$, then find the numerical value of the result when $x = -1$ and $y = 2$?

2) Find in the simplest form the algebraic expression that represents the area of the shaded part



3) If the area of a rectangle equals $(6x^3 + 18x^4 - 12x^2)$ square units and one of its dimensions is $(6x^2)$ length units, find the other dimension in terms of x .



4) If $(x + 3)$ is one of the factors of the expression $(x^2 - 2x - 15)$, find the other factor.

5) Find in the simplest form the result of
 $(7a - 2b)(3a + 5b)$

6) A cuboid with a volume of $(4x^2 + 12xy + 9y^2)$ cubic units and its base area is $(2x + 3y)$ square units. Find its height in terms of x and y .

7) Find the quotient of:
$$\frac{3ab^2 + 9a^2b - 6a^2b^2}{3ab}$$

8) Find in the simplest form the result of: $(m - 5n)(m + 3n)$



9) Find the value of x if: $3x^2 + 15 = 96$

10) Find the solution set for the inequalities:

1) $\frac{1}{3}x - 1 \geq 2$ in $\mathbb{Z}$

11) Simplify to the simplest form: $4(3x^2 + 5x) - x(x^2 - 7x + 8)$

12) Find in the simplest form the result of: $(x^2 - 1)(x^2 + 1)$

13) If the expression $(x^2 + x - m)$ is divisible by $(x + 4)$, then find the value of m .



14) Find in the simplest form the result of: $(2x - 7)^2$

15) Find the result of each of the following in scientific notation:

1) $(12.8 \times 10^7) - (6.2 \times 10^6)$

2) $(4.8 \times 10^{-7}) \div (0.8 \times 10^4)$



Q1) Choose the correct answer: (15 marks)

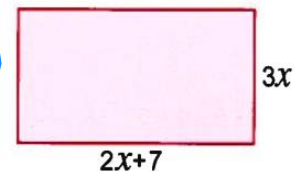
1) $\sqrt[3]{x} = 4$, what is the value of x ?

- (a) 16
- (b) 12
- (c) 24
- ☒ (d) 64

2) What is the algebraic expression that represents the area of the opposite rectangle?

- (a) $6x + 21$
- (b) $5x + 21$
- (c) $5x + 7$
- ☒ (d) $6x^2 + 21x$

$$\text{Area} = 3x * (2x + 7)$$
$$A = 6x^2 + 21x$$



3) $7x^0 + (2x^0)^0 = \dots\dots\dots$

- (a) 7
- ☒ (b) 8
- (c) $7x^2$
- (d) 9

4) $(1)^{100} + (-1)^{101} = \dots\dots\dots$

- (a) 2
- ☒ (b) 0
- (c) -1



(d) 1

5) Half of the number 2^x is $\frac{2^x}{2} = 2^{x-1}$

(a) 1^x

(b) $(1/2)^x$

(c) 2^{x+1}

(d) 2^{x-1}

6) Which of the following numbers is in scientific notation?

(a) 10×10^3

(b) -1.7×10^{-5}

(c) 0.7×10^{15}

(d) -0.02×10^9

7) 3.4×10^3 4.3×10^2

(a) $>$

(b) $<$

(c) $=$

8) $\sqrt[12]{(x^{12})} = \dots\dots\dots = x^6$

(a) x^6

(b) x^9

(c) x^8



(d) x^{15}

9) If $-2x^3 \times x = a x^n$, what is the value of $a + n$?

(a) -3

(b) -2

(c) 2

(d) 3

$$\begin{aligned} -2x^4 &= a x^n \rightarrow a = -2 \text{ and } n = 4 \\ \therefore a + n &= -2 + 4 = 2 \end{aligned}$$

10) If $x \in \mathbb{Z}$, which of the following is a solution to the inequality $1 - 2x < 3$?

(a) 0

(b) -1

(c) -2

(d) -4

$$\begin{aligned} -2x &< 3 - 1 \\ -2x &< 2 \\ \frac{-2x}{-2} &< \frac{2}{-2} \\ x &> -1 \end{aligned}$$

11) If $745 \times 10^{-9} = k \times 10^{-7}$, then what is the value of k ?

(a) 74.5

(b) 7.45

(c) 0.745

(d) 0.0745

12) Which of the following equals $4^a + 4^a + 4^a + 4^a$?

(a) 4^{4a}

(b) 16^{4a}

(c) 4^{a+1}

(d) 4^{a+4}

$$\begin{aligned} 4^a + 4^a + 4^a + 4^a &= 4^a [1 + 1 + 1 + 1] \\ &= 4^a \times 4 = 4^{a+1} \end{aligned}$$



13) If $(x - 7)(x + 7) = x^2 + a$, then what is the value of a ?

(a) 49

(b) -49

(c) 14

(d) -14

$$x^2 - 49 = x^2 + a$$

$$\therefore a = -49$$

14) What is the result of dividing $(x^2 - 12x + 20)$ by $(x - 2)$?

(a) $x - 4$

(b) $x + 4$

(c) $x - 10$

(d) x

$$\begin{array}{r} x - 10 \\ x - 2 \overline{) x^2 - 12x + 20} \\ \underline{-(x^2 + 2x)} \\ -10x + 20 \\ \underline{-(10x - 20)} \\ 0 \end{array}$$

15) A square has a perimeter of 16 cm. What is its area?

(a) 8

(b) 30

(c) 16

(d) 10

$$\begin{aligned} \text{Perimeter} &= L + L + L + L = 4L = 16 \\ \frac{4L}{4} &= \frac{16}{4} \rightarrow L = 4 \end{aligned}$$

$$\begin{aligned} A &= L \times L \\ A &= 4 \times 4 = 16 \end{aligned}$$

Q2) Complete: (15 marks)

1) If $0.000046 = 4.6 \times 10^n$, then $n = \dots\dots\dots$

$$4.6 \times 10^{-5}$$

2) $\sqrt{16} - \sqrt[3]{(-27)} = \dots\dots\dots$

$$4 - (-3) = 4 + 3 = 7$$



3) If $x^3 + 4 = 12$, then $x = \dots 2 \dots$
 $x^3 = 12 - 4 \quad x^3 = 8 \quad \therefore x = \sqrt[3]{8} = 2$

4) If $3^4 + 3^4 + 3^4 = 3^n$, then $n = \dots 5 \dots$
 $3^4(1+1+1) = 3^4 \times 3 = 3^5$

5) A trapezium with a middle base length of X cm and a height equal to half the length of its middle base. then its area = $\dots \frac{x^2}{2} \text{ cm}^2 \dots$
 $\text{height} = \frac{x}{2}$
 $\text{Area} = \text{middleBase} * \text{height} = x * \frac{x}{2} = \frac{x^2}{2}$

6) $-24 x^2 y^3 \div (-6 x^2) = \frac{-24x^2y^3}{-6x^2} = 4y^3$

7) $-24 x^2 y^3 \times (-6 x^2) = \dots 144x^4y^3 \dots$

8) A trapezium of height 5.4 cm and the lengths of the two parallel bases are 8 cm and 10 cm, then its area =

$\dots \dots \dots$
 $\text{Area} = \frac{1}{2} [8 + 10] \times 5.4 = 48.6 \text{ cm}^2$

9) $(a^2 - a) \div (a - 1) = \dots a \dots$

$$\begin{array}{r} a \\ a-1 \overline{) a^2 - a} \\ \underline{a^2 - a} \\ 0 \end{array}$$



10) The coefficient of ab in the product $(2a - 3b) \times (a - b)$ equals -5 .

$$2a^2 - 2ab - 3ab + 3b^2 = 2a^2 - 5ab + 3b^2$$

11) The solution set of the inequality $2x - 1 > x + 2$ in $\mathbb{Z}$ equals $\{4, 5, 6, 7, \dots\}$

$$2x - x > 2 + 1 \\ x > 3$$

12) If $(3x - 4)^2 = ax^2 + bx + c$, then $b = -24$.

$$9x^2 - 24x + 16$$

13) The multiplicative inverse of 3^{-2} is $\frac{1}{3^{-2}} = 3^2 = 9$

14) The additive inverse of 3^3 is $-3^3 = -27$

15) $(2x+3)^2 = 4x^2 + 12x + 9$



Q3) Answer The Following :(15 marks)

1) Simplify to its simplest form: $(x - y)^2 - x^2$, then find the numerical value of the result when $x = -1$ and $y = 2$?

$$\cancel{x^2} - 2xy + y^2 - \cancel{x^2} = -2xy + y^2$$

$$\text{When } x = -1 \text{ and } y = 2$$

$$-2xy + y^2$$

$$-2 \times -1 \times 2 + 2^2 = \underline{\underline{8}} \neq$$

2) Find in the simplest form the algebraic expression that represents the area of the shaded part

$$\text{Area of Shaded Part} = A_1 - A_2$$

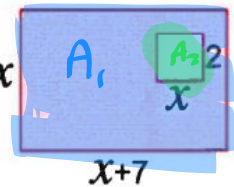
$$A_1 = 3x \times (x+7)$$

$$A_1 = 3x^2 + 21x$$

$$A_2 = 2x$$

$$\text{Area of Shaded Part} = 3x^2 + 21x - 2x$$

$$= 3x^2 + 19x$$



3) If the area of a rectangle equals $(6x^3 + 18x^4 - 12x^2)$ square units and one of its dimensions is $(6x^2)$ length units, find the other dimension in terms of x .

$$A = h \times w$$

$$\text{Let } h = 6x^2$$

$$\therefore w = \frac{A}{h} = \frac{6x^3 + 18x^4 - 12x^2}{6x^2}$$

$$w = x + 3x^2 - 2$$

$\therefore$ The other dimension is $x + 3x^2 - 2$



4) If $(x + 3)$ is one of the factors of the expression $(x^2 - 2x - 15)$, find the other factor.

$$\begin{array}{r} x-5 \\ x+3 \overline{) x^2-2x-15} \\ \underline{-(x^2+3x)} \\ -5x-15 \\ \underline{-(5x+15)} \\ 0 \end{array}$$

$x-5$

5) Find in the simplest form the result of

$$\begin{aligned} & (7a - 2b)(3a + 5b) \\ & 21a^2 + 35ab - 6ab - 10b^2 \\ & 21a^2 + 29ab - 10b^2 \end{aligned}$$

6) A cuboid with a volume of $(4x^2 + 12xy + 9y^2)$ cubic units and its base area is $(2x + 3y)$ square units. Find its height in terms of x and y .

$$\begin{aligned} \text{Volume} &= \text{Base} \times \text{height} \rightarrow h = \frac{4x^2 + 12xy + 9y^2}{2x + 3y} \\ \therefore h &= 2x + 3y \end{aligned}$$

$$\begin{array}{r} 2x+3y \\ 2x+3y \overline{) 4x^2+12xy+9y^2} \\ \underline{-(4x^2+6xy)} \\ 6xy+9y^2 \\ \underline{-(6xy+9y^2)} \\ 0 \end{array}$$

7) Find the quotient of:
$$\frac{3ab^2 + 9a^2b - 6a^2b^2}{3ab}$$

$$b + 3a - 2ab$$

8) Find in the simplest form the result of: $(m - 5n)(m + 3n)$

$$\begin{aligned} & m^2 + 3mn - 5mn - 15n^2 \\ & m^2 - 2mn - 15n^2 \end{aligned}$$



9) Find the value of x if: $3x^2 + 15 = 96$

$$3x^2 = 96 - 15$$

$$\frac{3}{3}x^2 = \frac{81}{3}$$

$$x^2 = 27$$

$$x = \sqrt{27} \quad x = \pm 3\sqrt{3}$$

10) Find the solution set for the inequalities:

1) $\frac{1}{3}x - 1 \geq 2$ in $\mathbb{Z}$

$$3 * \frac{1}{3}x \geq 3 * 3$$

$$x \geq 9$$

$$\{9, 10, 11, \dots\}$$

11) Simplify to the simplest form: $4(3x^2 + 5x) - x(x^2 - 7x + 8)$

$$12x^2 + 20x - x^3 - 7x^2 + 8x$$

$$12x^2 + 20x - x^3 + 7x^2 - 8x = -x^3 + 19x^2 + 12x$$

12) Find in the simplest form the result of: $(x^2 - 1)(x^2 + 1)$

$$x^4 - 1$$

13) If the expression $(x^2 + x - m)$ is divisible by $(x + 4)$, then find the value of m .

$$\begin{array}{r} x - 3 \\ x + 4 \overline{) x^2 + x - m} \\ \underline{-x^2 + 4x} \\ -3x - m \end{array}$$

$$\begin{array}{r} -3x - m \\ -3x + 12 \\ \hline 0 \end{array}$$

$$\therefore m = 12$$



14) Find in the simplest form the result of: $(2x - 7)^2$

$$4x^2 - 28x + 49$$

15) Find the result of each of the following in scientific notation:

1) $(12.8 \times 10^7) - (6.2 \times 10^6)$

2) $(4.8 \times 10^{-7}) \div (0.8 \times 10^4)$

$$\textcircled{1} 128 \times 10^6 - 6.2 \times 10^6 = \underline{121.8 \times 10^6} = 1.218 \times 10^8$$

$$\textcircled{2} \frac{4.8 \times 10^{-7}}{0.8 \times 10^4} = \frac{4.8}{0.8} \times 10^{-7-4} = 6 \times 10^{-11}$$



كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

